

**AUGUST**  
**1956**

- ROTARY BEAM FOR 20-15-10-5-2 MX ● VK-ZL CONTEST RESULTS
- AUSTRALIA AND THE INTERNATIONAL GEOPHYSICAL YEAR

# Amateur Radio

**Aegis tested components**  
*give you superior radio performance*

**ASK FOR THEM AT YOUR DEALERS!**

Here's why! Each Aegis Radio Part is assembled under the supervision of a skilled operator. Each is tested at several points along the production line. Every production step is rigidly controlled! This painstaking care is what gives a high "IQ"—INBUILT QUALITY—to Aegis Radio Parts. If you experience difficulty in obtaining Aegis Radio Components, contact the Australian agent in your State . . . see their names below.



- B/C Aerial Coils
- B/C R.F. Coils
- B/C Oscillator Coils
- Loopstick, Hashcoil, Whistle Filter
- I.F. Transformers
- Instrument and Tuning Knobs
- Coil Assemblies
- Chassis
- Dials, Indicator Plates
- Chokes, Sockets
- Resistor Strips
- Ceramic Insulators
- High Frequency Lacquer
- Extension Speakers
- Extension Speaker Control Units
- Mains and Aerial Filters
- Packaged Hardware
- 4-Watt Amplifier
- 10-Watt Amplifier
- Aegis-Mullard 5-10 Amplifier
- 3-Valve Tuner, etc.
- TV Components



**1/-**

**VICTORIA:**

Aegis Mfg. Co. P/L.  
205 L.L. Lansdale St.  
Melbourne.

**N.S.W.:**

Watkin Wynne P/L.  
123 Pacific Highway,  
North Sydney.

**QUEENSLAND:**

Chandlers Pty. Ltd.,  
Albert & Charlotte  
Streets, Brisbane.

**SOUTH AUST.:**

George Procter,  
46 Pirie Street,  
Adelaide.

**WESTERN AUST.:**

A. J. Wyle Pty. Ltd.,  
1061 Hay Street,  
Perth.

# "HAM" RADIO SUPPLIERS

(KEN MILLBOURN, PROP.)

## Bargains Galore - - Compare These Reduced Prices

### NOTE THESE VALVE PRICES

Look at these Bargain Priced NEW VALVES—			
1A5	2/6	6K7G	7/6
1B5	2/6	6K8GT	15/-
1H5	10/-	6L7	10/-
1K4	5/-	6L7G	7/6
1K5	10/-	6N7	10/-
2A3	10/-	6N8	15/-
2B5	10/-	6Q7G	5/-
2E26	60/-	6R7G	10/-
3Q5	5/-	6SC7	10/-
6B8	15/-	6SF7	12/6
6C8	7/6	6SJ7GT	12/6
6E5	10/-	6SK7GT	12/6
6F6	10/-	6SS7	12/6
6J8G	10/-	6U7	10/-
6K6	7/6	7A6	5/-
English VT127 (4v. power pent., 20 watt, octal base), 4/11			
Full stocks of New Valves available. Prices on request.			
Following list are ex Disposals, guaranteed—			
1K5	5/-	5U4	12/6
1K7	5/-	6AC7	10/-
1L4	5/-	6AG5	10/-
1S5	10/-	6C5	10/-
3A4	5/-	6D6	5/-
		6H6	5/-
		6SJ7G	10/-
		6SK7G	10/-
		6SL7	15/-
		6SN7	7/6
		957	10/-
		7E6	5/-
		7W7	5/-
		128J7	10/-
		128K7	10/-
		128Q7	2/6
		128Q7GT	2/6
		25AC5	15/-
		897	10/-
		815	50/-
		834	£1
		884	£1
		954	10/-
		955	10/-
		12A6	10/-
		12K8	10/-
		1625	15/-
		CV92	15/-
		EF50	5/-
		RL18	15/-
		VR75	15/-
		VR80	15/-
		VR100	5/-
		VR102	5/-
		VR103	5/-
		VT50	2/6
		VT51	2/6
		VT52	10/-

### THIS MONTH'S SPECIALS

VALVES: 6AG7 15/-, 6G8G, 6K8G, 7C5 10/-.

Filament Transformers, 10v. 3 amp., 12.6v. 2 amp., 6.3v. at 300 Ma., brand new ..... £2  
 Filament Transformers, 6.3v. 4 amp., 6.7 v. 4 amp., 6.7v. 4 amp. brand new ..... £2  
 Filament Trans.: 230v. input; 3 taps 4v., 2 taps 41v., 1 tap 5v., 1 tap 6.3v., 1 tap 12v., 1 tap 18v., at 10 amps., new, ..... 50/-  
 Filament Trans.: 230v. input; 2 taps 8.5v. at 8 amps. .... 35/-  
 2.5v. or 4v. Filament Transformers ..... 15/- each  
 Filament Transformer, 10v. 3 amp., 5v. 2 amp., brand new, 30/-  
 Transformers, high amp. low voltage. Input volts 230, output volts 13-13.5-14-15, at sixty amps. .... £5  
 Step-down Transformers, 230v. to 80v.-90v.-100v. at 2.5 amp. Brand new ..... £2/10/-  
 Power Transformers, 40 Ma., 250-0-250., 6.3v. 3 amp., new, 15/-  
 Bendix RA1B Power Supplies, 240 volt AC, 24v. at 1 amp. output 250v. HT ..... £5 each  
 Genemotor Power Supply, Type 16 SCR522, 24v. input, 150v. and 300v. output at 300 Ma. Includes relay, voltage regulator, etc. A gift at £1. Too heavy for postage. Packing 5/-.  
 2 uF. 1000v. block type Chanex Condensers ..... 12/6  
 4 uF. 1000v. block type Chanex Condenser ..... 12/6  
 Neon Indicators, B.C. base ..... 2/6

AT5 Transmitters, less valves and dust covers ..... £3  
 RAX Receivers, complete with valves, 150-1500 Kc., £16/10/-  
 Amer. Loran Receivers, contains 26 valves, less xtal, £12/10/-  
 BC733D Crystal Locked Receiver, 10 valves, 108-120 Mc., £5  
 SCR522 American Transceiver. Frequency: 100 to 150 Mc. in clean condition, less valves ..... £10  
 Command Receiver Racks, twin, brand new in cartons, includes two relays, switches, phone sockets, etc. .... £1  
 Command Receiver Right-angle Drives ..... 2/6  
 Command Receiver Flexible Drives, 12 ft. long ..... 11/-  
 Command Modulator Chassis, less Valves ..... 50/-  
 AWE1 Wavemeter, Aust. high freq., 145 to 165 Mc., £5/17/6  
 Inter-Com. Units, English. Contains two valves, transformers, P.M.G. key switch, resistors, etc. To clear ..... 12/6 each  
 Shielded Cable with two 12-pin Plugs ..... 7/6  
 Co-ax Connectors, Amphenol type, male and female ..... 7/6 pair  
 Co-ax, indoor type, cotton covered ..... 1/- yard  
 Co-ax Cable, any length, 50 ohms ..... 1/9 yard  
 Lockal Sockets ..... 1/6 each  
 Valve Sockets, ceramic, 5-pin ..... 5/-  
 Relays, A.W.A. Aerial Change-over type, 12v. .... 15/-  
 English Carbon Mike Transformers, new ..... 5/-  
 Meters—0.5 Ma., 1½ Ma. movement, 2" round type, new, 22/6  
 Meters—0.10 Ma. 2" round, Triplette, new ..... 17/6  
 Meters—0.100 Ma. 2" square, scaled 0-300, new ..... £1  
 Meters—0.150 Ma. 2" square, new ..... 27/6  
 Meters—0.25 Amp. R.F. 2" square type, new ..... 15/-  
 Meters—0.20v. 5 Ma. movement, 2" square type, new ..... 15/-  
 New 1956 Australian Call Books now available ..... 4/6 each  
 W.I.A. Log Books, 96 pages—48 ruled and 48 plain, 4/6 each

### LARGE STOCK OF CRYSTALS

3.5 Mc. Marker Crystals, latest miniature type complete with socket ..... £2/10/-  
 Amateur Band Crystals, any frequency ..... £2  
 Gold Plated Marker and Commercial Crystals, price on request. Delivery in seven days.

Following is a list of Crystal Frequencies available for immediate delivery. £2 each—

2081.2 Kc.	5655.555 Kc.	7021.5 Kc.	7073.5 Kc.	7175 Kc.
2103.1 Kc.	5677.777 Kc.	7021.715 Kc.	7075 Kc.	7725 Kc.
2112.5 Kc.	3700 Kc.	7024 Kc.	7077 Kc.	8009 Kc.
2208.1 Kc.	5722.222 Kc.	7025 Kc.	7080 Kc.	8011 Kc.
2218.7 Kc.	5744.444 Kc.	7028 Kc.	7100 Kc.	8155.714 Kc.
3282.5 Kc.	7570 Kc.	7028.5 Kc.	7106.7 Kc.	8161.538 Kc.
3300 Kc.	5892.5 Kc.	7032 Kc.	7110 Kc.	8171.25 Kc.
3335 Kc.	6450 Kc.	7032.6 Kc.	7120 Kc.	8176.923 Kc.
4096.6 Kc.	6850 Kc.	7035 Kc.	7121 Kc.	8182.5 Kc.
4285 Kc.	7004 Kc.	7040 Kc.	7125 Kc.	8183.5 Kc.
4495 Kc.	7005 Kc.	7042.65 Kc.	7126 Kc.	8317.2 Kc.
4535 Kc.	7010 Kc.	7045 Kc.	7130 Kc.	8320 Kc.
4540 Kc.	7010.7 Kc.	7047 Kc.	7134 Kc.	10.511 Me.
5000 Kc.	7011.5 Kc.	7050 Kc.	7140 Kc.	10.515 Me.
5050 Kc.	7011.75 Kc.	7053.5 Kc.	7145 Kc.	10.524 Me.
5300 Kc.	7012 Kc.	7063 Kc.	7150 Kc.	10.530 Me.
5360 Kc.	7016 Kc.	7064 Kc.	7156 Kc.	10.5465 Me.
5456 Kc.	7018 Kc.	7068 Kc.	7162.5 Kc.	10.556 Me.
5530 Kc.	7021 Kc.	7072 Kc.	7163 Kc.	12.803 Me.
5633.333 Kc.			7174 Kc.	12.915 Me.

### 5A MELVILLE STREET, HAWTHORN, VICTORIA

North Balwyn Tram Passes Corner, near Vogue Theatre.

Phone: WA 6465

Money Orders and Postal Notes payable North Hawthorn P.O. Packing Charge on all goods over 10 lbs. in weight, 5/- extra.

# AMATEUR RADIO

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA

**EDITOR:**

J. G. MARSLAND, VK3NY.

**ASSOCIATE EDITOR:**

R. W. HIGGINBOTHAM, VK3RN.

**TECHNICAL EDITOR:**

K. E. PINCOTT, VK3AFJ.

**TECHNICAL STAFF:**

J. C. DUNCAN, VK3VZ.

D. A. NORMAN, VK3UC.

R. S. FISHER, VK3OM.

A. E. MORRISON, VK4MA

**ADVERTISING REPRESENTATIVE:**BEATRICE TOUZEAU,  
96 Collins St., Melbourne, C.I.  
Telephone: MF 4505**PRINTERS:**"RICHMOND CHRONICLE,"  
Shakespeare St., Richmond, E.I.  
Telephone: JB 2419.

MSS. and Magazine Correspondence should be forwarded to the Editor, "Amateur Radio," C.O.R. House, 191 Queen Street, Melbourne, C.I., on or before the 8th of each month.

Subscription rate in Australia is 12/- per annum, in advance (post paid) and A15/- in all other countries.

Wireless Institute of Australia  
(Victorian Division) Rooms' Phone  
Number is MY 1087.

**THE CONTENTS**

A Rotary Beam for 20-15-10-5-2 Metres .....	2
Australia and the International Geophysical Year .....	5
Phone and C.W. Monitor .....	6
Hints and Kinks .....	6
Light Weight Feeder Spreaders .....	7
Cable Sockets .....	7
Simple Group Boards .....	7
What About An Index? .....	7
1955 VK-ZL DX Contest Results .....	8
Valve Data—	
QEE03/12—Double Tetrode .....	9
QE04/10—Power Tetrode .....	9
Amateur Call Signs .....	10
Television Receivers—I.F. Recommendations by the Australian Broadcasting Control Board .....	12
YL Corner .....	14
Trade Review—	
Power Transformers by A & R .....	14
DX activity by VK3AHH .....	15
Book Review—	
"Germanium Diodes" .....	15
Prediction Chart for August, '56 .....	15
Short Wave Listeners' Section .....	16
Fifty-Six Megacycles and Above .....	17
Special VKIACA QSL Card .....	17
Federal, QSL, and Divisional Notes .....	19
Correspondence .....	24

Published by the Wireless Institute of Australia,

C.O.R. House, 191 Queen Street,  
Melbourne, C.I.**EDITORIAL**

## THE RADIO AMATEUR

When the art of Radio was in its infancy, most of the experimental work was carried out by those who were interested from the purely technical and scientific viewpoint without thought of pecuniary reward. In other words, they had the essential Amateur qualifications. As the art became developed for commercial use, regulations became necessary but, except in times of extreme national emergency, there was always a place for the Radio Amateur as we know him.

The Amateur station licences that we hold today have their justifications in our attempts to improve communication and in the facilities that they offer to us in the field of research. To regard an Amateur station as the equivalent of a telephone without wires would be to deny the Amateur Radio tradition and to remove the reasons for the existence of our sometimes hard-won facilities. It should be our constant endeavour to use our licences for the true purposes for which they are issued.

In the use of our Amateur stations for communication purposes, particularly in DX work, we have at hand facilities that are not always available to commercial research workers. Amateur Radio is an international movement in which we can find fellow-workers in many overseas countries and can conduct experiments in communication on a global scale. Bearing in mind also that Amateur Radio is a hobby, we are forced to consider seriously the cost of our equipment. The result of this is that we have to seek efficiency with economy and achieve our results from low-powered equipment of a type that lends itself readily to emergency use. The value of this form of research and training has been demonstrated clearly in our own country in recent years. The growing number of operators in our communication bands has also encouraged research into the more effective use of our Radio spectrum by such means as s.s.b. and highly selective receivers.

Although purely technical research is not confined to the v.h.f. bands, much of it takes place there. The impetus given to work in these bands by Radar and Television and the relative freedom from interference of various kinds provide conditions in which work of a standard approaching more nearly that of the laboratory may be carried out. The short wavelengths encourage antenna experiments that would be impracticable in the medium-frequency bands and enable the construction of working models for subsequent application to lower frequencies. The granting of the Limited Licence by the Authorities is evidence of official recognition of the possibilities of the v.h.f. bands as a research medium.

Communication in the v.h.f. bands, apart from pure research, presents many problems and opportunities. The equipment used may be built in such compact form that it is particularly adaptable to portable and mobile operation. Encouragement for this type of operation is apparent in the activities of the various groups of enthusiasts within the ranks of the Institute. The recent approval for the issue of Television permits will also enable research in Television by propagation instead of by the closed circuit methods previously required.

It is hardly to be expected that every Radio Amateur would engage in all of the activities we have mentioned. A more reasonable expectation is that we, as Radio Amateurs, should be conscious of our tradition and should strive to expand our knowledge. By our deeds and by our words, we must show that we are engaged in a scientific recreation that has a bearing on the welfare of the community. In communication, particularly, we have to remember that we can be heard by listeners on the bands—official or otherwise. Amateur Radio is in our hands and it is up to us to see that it holds its rightful place.

FEDERAL EXECUTIVE.

# A Rotary Beam for 20-15-10-5-2 Metres

BY D. C. HABERECHE,\* VK2RS

THERE is no doubt that many of us have from time to time surveyed those multi-band rotary beams one sees from place to place, wondering just what could be done in our own particular conditional circumstances, without perhaps digging too deeply into the family budget. Here is a suggestion which you may find well worthy of consideration.

The writer has for some time been faced with the problem of constructing a rotary system for these bands, namely 20, 15, 10, 5 and 2 metres. Having a 35 foot Oregon tower graced only with a 16 element 2 metre beam, it was decided during the lull in v.h.f. over the winter months to see what could be done. It was considered that separate beams for each band would be somewhat formidable particularly as a 24 element 2 metre beam was considered a near minimum requirement in our particular QTH, to erect this above an already top heavy construction was considered suicide.

Bearing these in mind, it was decided that a rotary single system WBJK type beam was about the best suggestion, however its performance on 15 metres was somewhat in doubt. According to available information its performance on 20 and 10 metres was quite good, being the near equivalent of a good 2 element on 20 and better than a 3 element on 10 metres (since on this band, it becomes virtually a 4 element job).

The question now arose, how would it perform on 15 metres? A chance QSO with a well known VK9 Amateur gave us all the incentive necessary, a short burst from the pages of his log were more than enough to prove in the very least that it possessed both gain and directivity on this band.

And as a well known comedian would say, "Let's give it a go." The results were far greater than our expectations on the three bands. European stations have been worked on all three bands over the past month on phone with reports of S9 and over on 15 metres. However, on 10 metres the reports have not been as good to Europe although we have had many QSOs at R5. No doubt the rather patchy conditions have had quite a lot to do with this, and in view of the repeated comments that "you are the best VK station we have worked since 1947 OM" has given us a great deal of faith in its performance on this band. Many QSOs have been made with Ws with some really excellent reports on all three bands.

## CONSTRUCTION REQUIREMENTS

**Beam:** Kiln dried Oregon, 14 feet long, either 4" by 2" or 4" by 4", depending on whether the 2 metre section is required or not.

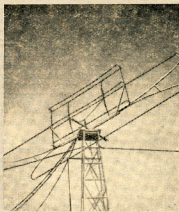
**Bamboo Supports:** Four lengths of selected bamboo rod, obtainable from most sports stores. These are approximately 15 feet in length, clamp these to the ends of the beam (see diagram).

**Vertical Brace:** Two lengths of 2" x 1" Oregon 9 feet long, if the two metre

section required, and 4 feet approximately otherwise. Screw these to either ends of the beam in the vertical plane and brace to the boom toward the centre with 2" x 1" timbers; two pieces required for each vertical brace, as per diagram.

**Centre Cross-Piece:** To the centre of the boom screw two pieces of 2" x 1" timbers 8 feet 10 inches long; space these approximately 1 foot apart, half way along each side, and at each end fit 10" pieces of the same timber to form a ladder construction. This cross-piece apart from supporting the elements, forms the boom of the 5 metre beam.

**Spreaders for Bamboo Supports:** Construct from 2" x 1" timber two 2 feet 6 inch lengths, from the ends cut a



wedge shape piece to enable a tight fit between the bamboo supports with the wire elements of the beam attached. Before binding these in position, form the beam by attaching the four elements each 16 feet 6 inches long and bend the bamboo until the required spacing of 8 feet 8 inches between elements is reached. You will probably find that there will be an excess length of bamboo. After making sure that the spacing between elements is correct with the spreaders moved firmly in place, remove the excess lengths of bamboo.

**Wire Supports:** From the ends of the elements to the vertical brace, approximately 3 feet 6 inches up from the boom, attach wire supports just sufficiently tight enough to prevent any sag in the bamboo supports when lifted from the ground. These could be broken with insulators if required.

**Cross-Over Section:** These are made up of the same materials as the elements and are made each 9 feet long crossing over at the centre of the boom. The feedline is attached approximately 1 inch from the centre. It is best to use an open wire line attached to a parallel tuned aerial coupler if the length of feedline does not exceed 60 feet, however for ease for rotation tuned 300 ohm ribbon can be successfully used

if the length of feed is not too long, however here the velocity factor of ribbon must be considered—approximately 45 feet of ribbon is the equivalent of a 66 foot length of open wire feed and providing the overall length does not exceed the 45 feet mark, the losses encountered will not be serious.

It is essential to use a coupler if multi-band operation is required, a single parallel tuned circuit will suffice, approximately 5 turns of heavy gauge wire 2" in diameter, tuned by a 100 pF. double-spaced condenser.

A word of warning! Use good quality wire throughout, most particularly in the feedline. Single strand plastic insulated wire is not satisfactory, the currents in this type of antennae are very high and unless good materials are used losses due to heating will occur.

An interesting comparison between the two types of feed lines, i.e. open wire and 300 ohm ribbon, was made. It was found that on "receive" the width of the beam appeared to be about 40 degrees before a noticeable drop in signal strength occurred. This, according to available information, was near correct. However, when the ribbon feed was attached, on "transmit" the beam appeared to be quite noticeably steeper, approximately 30 degrees wide, with a drop of from 5 to 7 S points on the ends. A much better drop than with the open wire line. This is probably due to the lower signal pick-up in the lower impedance line, however there appeared to be no noticeable difference between the two types when transmitting.

## 24 ELEMENT 2 METRE BEAM

This consists of 12 driven elements backed by 12 reflectors, arranged as two separate 12 element beams mounted side by side and fed in phase. This type of beam is known as a phased or co-linear type. The elements themselves are made from expanded copper wire, having at least three strands of 22 gauge wire.

## CONSTRUCTION

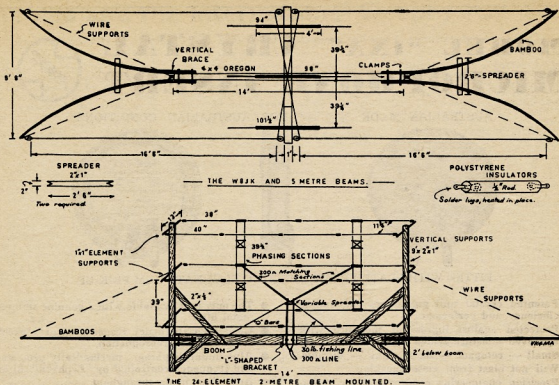
**Element Supports:** These are made from 1" x 1" timber 13" long, six being required, at a distance of 5 1/2" from the centre and at ends of the supports drill a hole. Screw these supports to the vertical braces, three to each brace at a distance of 39" apart, commencing from the top of the brace. This will now complete the framework on which the beam is mounted.

**Insulators:** Between each element and at the ends are attached small insulators made from polystyrene rod of approximately 1" diameter. There are 15 lengths 1" long and a similar number 2" long required. At each end, with the aid of the soldering iron, heat into the rod a good quality solder lug so that approximately 1/2" protrudes. After the 30th insulator you will have become quite professional!

**Elements:** Cut 12 lengths 38" long for the radiators and attach these to the 2"

\* 605 Abercorn Street, South Albion, N.S.W.





polystyrene insulators, trimming the length so that over-all, solder lug included, you have 38". Do likewise for the reflectors, however these are made 40" long and attached to the smaller insulators.

**Mounting the Elements:** Commence from the top of the vertical brace, attach the first four reflectors, drawing the wire reasonably tight, then attach the centre bay and repeat. However, do not attach this permanently as when the last bay is fitted in place, there may be some tightening necessary in the centre section.

Care must be taken to see that the radiators are as near symmetrically behind the reflectors as is possible. Some trimming of the reflector elements may be necessary to ensure this.

**Phasing Sections:** These are made from the same material as the elements and are each 39 1/2" long, crossing over between the lower and centre, and centre and upper bays, inserted at each cross-over is a four terminal polystyrene block.

**Matching Sections:** Cut two lengths of 300 ohm ribbon 51" long, which is an electrical wavelength (wavelength times velocity factor, i.e.  $76 \times 0.67 = 51$ "). Attach these to the centre bay of each phasing section, leaving the other ends unattended for the present. Incidentally, open wire line of 300 ohms impedance could be used here, however there would be a considerable length of wire left floating when attached to the "Q" bar.

**"Q" Bars:** Obtain two lengths of 3/4" outside diameter copper tuning, cut to 20". Make up an "L" shaped metal

bracket from a piece of flat metal measuring 2" x 4", drill two holes for mounting to boom and two other holes spaced 1 1/4" apart on the opposite side to the mounting holes; bend the bracket. Through the two holes opposite the mounting holes, attach two stand-off insulators and mount your "Q" bars, preferably with bolts, flatten the ends of the rods and drill suitable holes. Mount the "Q" bars to the boom so that they stand up on top of the boom in the near vertical plane, just sufficiently angled so that they will not foul the elements of the beam.

A few inches from the top of the bars attach a suitable variable spreader. This can be made from two pieces of bakelite or fibre approximately 4" long and 1" wide. Drill holes near each end and one in the centre and mount (see diagram). Use lengths of 30 lb. nylon fishing line to assist in holding the bars firm.

Connect the floating ends of the matching sections to the top of your "Q" bars, making sure that there are no twists in the ribbon. The left hand side of one 12 element beam and the left hand side of the other are joined together and attached to one side of the "Q" bars, and the right hand side of each beam is connected to the other "Q" bar. This ensures correct phasing. Connect your feedline, 300 ohm ribbon, to the base of the "Q" bars.

**Matching:** This can be done by means of a "Twin Lamp Standing Wave Indicator." Although this is not the only method by any means, it is, however, one of the simplest. With the beam raised a few feet from the ground and, of course, with your transmitter switch-

ed on, adjust the spacing between the "Q" bars so that the lamp nearest the antenna will not light or light perhaps very weakly compared with the lamp nearest the p.a. When this has been done securely tighten the variable spreaders. This now completes the 2 metre beam.

### 3 ELEMENT 5 METRE BEAM

This consists of a radiator 98" long, a reflector 101 1/2", and a director 94". The elements are spaced 0.2 of a wavelength apart or 39 1/2".

All elements in use here were cut from conduit and mounted to the cross-piece by means of individual element supports made from 1 1/2" square timbers, 4 feet long. The elements themselves are attached to the supports by means of stand-off insulators. The method of feed employed is a Delta Match with 50 ohm ribbon, fanned out either side of the centre of the driven element.

### SUMMARY

There is little else to say with possibly one very important consideration previously overlooked. Before mounting the beams, give all woodwork a very generous application of paint; once up on the tower or pole, it's there to stay, storms permitting.

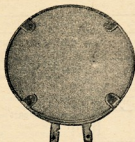
The cost of the complete set-up in the writer's case, including the oregon lattice type tower did not exceed £25, a comparatively cheap all-band beam set-up.

The writer would be very pleased to hear from anyone who may decide to undertake this venture either in part or in the full.

# MODEL "1XA" CRYSTAL MICROPHONE INSERT



AUSTRALIAN MADE — — FOR AUSTRALIAN CONDITIONS



FITTED WITH PLATED REAR SHIELD TO ELIMINATE HUM PICK-UP

- Patented crystal unit guarantees outstanding efficiency and performance.
- Protected against ingress of moisture with approved moisture sealed crystal element.
- Small — compact — lightweight — durable.
- Will not blast from close speaking.
- Precision engineering ensures realistic reproduction and high output with long life and dependable operation.

- The only unit available with a genuine sintered metal filter.
- Good high frequency response ensures excellent speech reproduction.
- Aluminium diaphragm mechanically protected and frequency controlled by "Zephyrfl" filter.
- Australian made throughout.
- Only carefully selected cements used throughout, to suit Australian climatic conditions.

## TECHNICAL DETAILS

Rochelle salt crystal microphones are perhaps the most widely used for all types of service where quality speech and music reproduction at high output levels is a requirement. They are dependable in performance and when fitted with the appropriate "Zephyrfl" filter, their frequency response may be adjusted to suit any application or requirement.

This crystal microphone requires to be terminated with a high value parallel load of the order of 1 to 5 megohms for best results.

The mass of the moving parts is small, hence the sensitivity is high and a high efficiency is achieved.

Light gauge solder lugs are provided so that excessive heat in soldering will not be transmitted to the crystal element.

When mounted in a microphone cage, it is recommended that the insert be suspended in rubber, to eliminate shock and vibration.

One of the connecting lugs is directly connected to the case and care should be taken to solder the metal shield of the microphone cable to this solder lug, keeping the unscreened portion of the centre conductor as short as possible to eliminate hum pick-up.

All crystal elements are mounted on high grade suspension pillars, being fixed thereto with a good quality cement, thus ensuring stability and long life.

Case 1 1/4" diameter (rear), 3/8" thickness, 1-13/16" overall diameter (front) with filter fitted.

Frequency Response = 60-6,500 c.p.s.  
Output Level = -45 db (0 db = 1 volt/dyne/cm<sup>2</sup>)  
Impedance = Model 1XA Grid 1 — 5 megohms.



Approximate Frequency Response Curve

AVAILABLE FROM ALL LEADING TRADE HOUSES

**ZEPHYR PRODUCTS PTY. LTD.**

58 HIGH STREET, GLEN IRIS, S.E.6, VIC.

Phone: BL 1300

# Australia and the International Geophysical Year\*

By PROFESSOR H. C. WEBSTER, Convener, Australian National Committee for the I.G.Y.

THE period, July 1957 to December 1958, will have a special significance for physicists, for during this period a concerted effort, spread over a large proportion of the earth, is to be made to understand the various physical phenomena which occur naturally in and on the earth. Among the phenomena, the following have been singled out for special study:

1. The movements of air and water in the atmosphere, especially in the stratosphere and above (say, 30,000 ft. upwards), their part in the general circulation, and broadly the study of what we may call the overall weather. A weather phenomenon of special interest is the thunderstorm, for it has an indirect bearing on other geophysical phenomena; another is the "jet stream" of such importance in high level aviation; a third is the "ozone" layer at about 80,000 ft.

2. The changes in the earth's magnetism which occur, some regularly, some in magnetic storms. Of special importance are the changes near the equator (magnetic) and the regions where aurora are frequently seen overhead (the auroral zones). Here "electrojets" (intense currents) occur in the higher parts of the atmosphere.

3. The brilliant optical phenomena, seen especially in the Arctic and Antarctic, known as "aurora polaris." Apart from observations by eye and by photograph, these aurora can be observed by radio; we shall return to this aspect later.

4. The various changes which occur in the ionosphere, the strongly-conducting layer extending from about 200,000 ft. upwards. Members of the W.I.A. are familiar with its vital influence on radio communication (except at u.h.f.). The connection between ionospheric changes, magnetic changes, aurora, and phenomena on the sun is perhaps not so well known.

5. The changes in the activity of the sun, solar flares and ejections, sunspots, etc., any, in fact, which influence geophysical phenomena. During the period 1st July, 1957, to 31st December, 1958, the number of sunspots is expected to be very high; the peak of the sunspot cycle is predicted to occur during that period.

6. Cosmic rays: These rays, of so far undetermined origin, enter the earth's atmosphere from outside and produce various secondary phenomena, which extend to sea level and below. They have different properties at different latitudes and show small variations which may throw light on their origin.

7. The behaviour of glaciers, especially those in inaccessible regions such as Antarctica.

8. Ocean currents, ocean wave systems, changes in salinity, etc.

9. Earthquake and the transmission through the earth of earthquake shocks. This throws light on the constitution of the interior of the earth; whether it is solid or liquid, hot or cold.

10. The precise shape of the earth; accurate surveying and accurate gravity measurements. These things do not change (at least not at a measurable rate), but the International Geophysical Year provides a good opportunity for improving our knowledge of them.

Although the promoters of the International Geophysical Year would naturally have wished these phenomena investigated intensively for the whole period and at points closely distributed over the whole earth, it was fully realised that this would be impossible of achievement. A less ambitious programme calling for a limited deployment of stations was therefore formulated and this programme has been accepted by the forty nations which are participating in the International Geophysical Year programme. Although the areas set down for special study vary with the phenomenon to be studied, it is broadly true that special interest attaches to the polar regions, and to strips of the earth's surface 20° wide in longitude straddling certain selected meridians, including 0°, 140°E, 75°W. For meteorological purposes other strips, including 105°E, are included.

Again, although a limited programme of observations should be carried out every day, there are certain selected days, and certain selected periods, when more frequent observations should be made; moreover, there are certain experiments which will be carried out only on these selected days. These days have been termed World-Days. Some have already been selected (Regular World-Days). The rest will be selected only a few hours in advance (Special World Intervals). Such alerts will be given when interesting disturbances appear on the sun.

While most of the observations for the International Geophysical Year will be made on the ground, the programme includes a number of measurements which will require balloons carrying instruments to be sent up to over 30,000 ft. Moreover, it is proposed to send instruments up in rockets to even greater altitudes (perhaps 600,000 ft.). It will probably not be possible to send up many rockets, as they are exceedingly costly; they may be sent up only on "World Days".

Of especial interest is the plan to launch "space satellites" which will orbit round the earth some 300 miles up and will carry instruments to permit their being followed (by radio) and send down measurements. The satellite programme is the exclusive prerogative of the United States and is expected to cost \$12,000,000. Indeed the United States programme for the International Geophysical Year is the most ambitious of all and may cost altogether \$28,000,000.

Although it is only major powers like the United States and the U.S.S.R. which can mount programmes of this order of magnitude, nearly forty other nations are taking part in the effort, to the extent permitted by their scientific and financial potential.

Australia is in a position to play a vital role in the International Geophysical Year, for its territories stretch from the Equator to the South Pole and include the 140°E. zone which is singled out for special study, as well as the Antarctic zone which is of special interest in all fields of study and the equatorial zone which is of special interest in ionospheric and Geomagnetic observations. Fortunately, its existing records will enable it to carry out a fairly extensive programme of observations in the fields of Meteorology, Geomagnetism, Aurora (at Macquarie Island and Mawson), Ionosphere, Cosmic rays (Hobart and Macquarie Island) and Seismology, but an earnest effort is being made to install additional observatories in all these fields and to increase the frequency of observations. We also hoped to carry out Glaciological, Oceanographical and other observations not previously attempted. It is now certain that some of the new activities planned will be effected but others still remain doubtful. Of particular interest are the extensions in the polar stations of Macquarie Island, Mawson and Vestfold Hills (the latter two on the Antarctic continent).

Members of the Wireless Institute of Australia will no doubt be especially interested in the work on the ionosphere. The existing ionospheric observatories (Townsville, Brisbane, Watheroo, Canberra, Hobart, Macquarie Island and Mawson) will be maintained and a new observatory will, it is hoped, be opened at Moresby. In addition, it is hoped to install a number of observing points for special ionospheric phenomena, such as winds and drifts, absorption and the propagation of whistling atmospherics. The Special World Days referred to earlier will be days on which ionospheric disturbances are expected and more frequent ionospheric observations will therefore be made.

The aspect of the programme upon which the National Committee will seek the co-operation of Wireless Institute members is in connection with the aurora. It has been found in North America that during auroral displays, long distance communication is frequently established at unexpectedly high frequencies—especially in the 50-60 Mc. band. It has been found that in these cases the path between the stations usually passes through or near a region where the aurorae reach the zenith and they are therefore ascribed to reflection from the auroral streams. It is anticipated that during 1957-8 the auroral displays will be particularly good and may reach to comparatively low latitudes. It will therefore be of great interest to the Committee to know of any long distance radio contact in the 50-70 Mc. band, especially if the path passed south of 60° latitude. Such contacts are perhaps more likely to occur for stations located in the southern States, but any report would be of interest. Nor is the interest confined to

(Continued on Page 6)

\* Substance of talk delivered to the Wireless Institute of Australia, Queensland Division.



## HINTS AND KINKS

BY C. W. MANN,\* VK5DF

WITH the request for articles for our magazine, I will endeavour to illustrate my useful transmitter monitoring instrument. I call it a wave meter, cum phone-cw. monitor, cum overmodulation indication. The bits and pieces are fitted in a box 6" wide by 12" high, by 4½" deep, but with a little more care, guess that a much smaller box would do.

There are two compartments in the box, one holds the tuned circuits, and the other the valves, audio transformer, etc. Power for the valve heaters is obtained from the frequency meter power supply.

Coil "A" is about 45 turns close-wound on a one inch former, and it has a 3-30 pF. trimmer across it.

Coil "B" has 14 turns double-spaced wound on a  $\frac{1}{2}$ " former, also a small trimmer across it. These trimmers enable the operator to get full band-spread on the tuning condenser.

As can be seen from the drawing, the aerial is switched off for c.w.† as otherwise there is too much power for the audio oscillator; and it will pick up enough signal from the transmitter oscillator on the key-up position to operate the monitor.

The grid leak and condenser of the triode valve may be altered in value to suit the particular tone required.

Briefly, when monitoring c.w. the diode valve rectifies enough r.f. to provide high tension current to drive the audio oscillator and give a very nice tone in the phones on the key-down position. A little "juggling" of the circuit may be necessary to have a sharp make and break of the monitor tone for transmitter key-down and up position. I have found the c.w. monitor a great help in c.w. operating, it helps a lot to keep spacing correct and a steady "hand."

On phone monitoring, overmodulation is indicated by a fluctuation of the milliamp. meter, or putting it another way, the meter shows carrier break by swinging a few degrees on modulation; the amount of movement allowable is soon determined by a little experiment.

I trust that the above will be of sufficient information for someone to find the time to build and I am sure when that is done they, like me, will find it ever so useful.

# AUSTRALIA AND THE INTERNATIONAL GEOPHYSICAL YEAR

(Continued from Page 5)

the period after July 1957. More details about this plan for radio-location of aurorae will be published later.

Another part of the International Geophysical Year plans which still has to be worked out is the distribution of Alerts, announcing the approach of a Special World Interval. The initial decision will be taken by the United States National Bureau of Standards; the decision will be broadcast by radio; it will then be the responsibility of the National organisation to see that all observers are immediately informed.

The International Geophysical Year provides a great opportunity for Australia to establish its position in the scientific world. Above all, it provides all countries with an opportunity for breaking-down of barriers of jealousy and suspicion and for showing that there is, after all, just one world.

### CHANGE OF ADDRESS

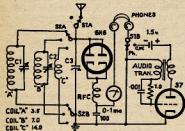
W.I.A. members are requested to promptly notify any change of address to their Divisional Secretary, not direct to "Amateur Radio."

## LIGHT WEIGHT FEEDER SPREADERS

Spreaders for open-wire transmission lines should be as light as possible, but sufficiently rigid and with good electrical qualities. Commercially made spreaders of Polystyrene can be bought, but are expensive. A simple and satisfactory substitute can be obtained, however, at no cost at all, from many hospital casualty and orthopaedic departments.

Plaster of Paris bandages of a certain proprietary make are supplied rolled on lengths of X-section plastic extrusion; these are discarded when the bandages are used, and arrangements can usually be made for them to be saved and put aside.

The material is a thermo-plastic and is slightly flexible, but sufficiently rigid for use as spreaders. It appears to have good electrical characteristics. The standard lengths, according to the width of the bandages, are 3, 4, 6 and 8 inches; the 4 and 6 inch lengths are most readily available (Fig. 1).



Coil "C" has also 14 turns double-spaced and wound on a  $\frac{3}{4}$ " former, but there is no trimmer needed.

All the winding wire is about 22 s.w.g. The aerial is a piece of wire about 3 ft. long, the end of it going to within about 12 inches of the transmitter aerial tuning system.

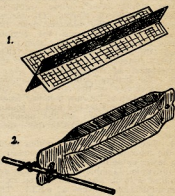
The phones are high impedance, the audio transformer is of the once used type in "ancient" broadcast receivers and is 4-1 ratio. The 1.5v. dry cell is a miniature torch battery and has already lasted five years. The dry cell is fitted there for what I believe is "contact potential"; briefly it is to neutralise the small voltage generated from cathode to plate of the triode valve when the cathode is hot.

The valves used are shown on the drawing, but I suggest that any valves may be used so long as they are connected as such—the first as a diode and the second as a triode. The switches are a selector for the appropriate coil, and a two-way one to change from phone to c.w. monitoring.

In operating the monitor on phone the meter should read about three-quarters (or a little more) of a milliamp., and for c.w. monitoring the meter only just shows a reading and that's all.

\* Wavell Street, Port Lincoln, S.A.

† Optional—depending on position of instrument and extent of shielding of transmitter.



When collected, the sections are usually covered with a film of dried plaster, but this can be broken away without difficulty owing to the flexibility of the material. If any plaster remains, it can be removed by soaking in water and scrubbing with a stiff brush. If a non-standard length is required, it can be cut with metal shears or stout scissors.

To form the ends, dip the distal half-inch in very hot water to soften the plastic, then squeeze it in a cold pair of pliers or a vice for a few minutes to flatten the end. When the material cools it will retain the shape given it while hot.

To fix the spreader between the conductors of the line, a small hole is drilled within a quarter of an inch of the end, using a hot needle or fine twist-drill; a short length of copper wire is then passed through the hole and twisted round the conductor on either side (Fig. 2).

—S. J. Lloyd, VK3AST.



# WHAT ABOUT AN INDEX?

BY J. G. OLIVER,\* VK7JO

It would be quite safe to say that practically every Amateur station has an index system of some kind or other, the most elaborate being in the form of a card system in which every station worked has a separate card on which is recorded particulars of each QSO. These cards are kept in boxes in sections, each section representing a country.

While this system is ideal for the ardent DXer, a less elaborate system will fill the bill for the average Amateur, the main consideration being a quick method of telling whether a station calling has been worked before, and if so a record of the name of the operator and possibly the power and any particular tests made.

The newcomer to the ranks of Amateur Radio is faced with the problem of deciding what system he will adopt; the method described here has been in use for a number of years and meets the main requirements of convenience and quick reference.

The only item of expense is a loose-leaf book with pages about 8½" x 5½" and an alphabetical index. Under each letter of the alphabet are three pages, which are ruled as shown in the diagram, the first page headed VK—TWO LETTERS, the second VK—THREE LETTERS, and the third ZL and DX. These headings are self-explanatory, the dividing of the VK calls into two groups gives more space for what will be the greatest number of stations worked.

An important point to watch is the choice of an indicating letter for each call sign, the use of the first letter is not suitable as the majority of calls start with "A", particularly in the three letter group, but by using the last letter, quite an even spreading through the whole of the alphabet will be obtained, and if on each page the VK7s, VK3s, are grouped, any station can be found very quickly.

Of course the column at the right is most important. When a QSL card is sent, an "S" is put in and then an "R" when a card is received. An indication can also be made as to whether the card was posted direct, or via the bureaux,

\* Latrobe, Tasmania.

## R.D. CONTEST

Readers are reminded that the Remembrance Day Contest commences at 1800 hours E.A.S.T. on 11th August. On pages 10 and 11 of this issue will be found a list of the Canberra (VK1) stations, who are to be regarded as operating in VK2 call area for this Contest. Rules appeared on page 5 of the July 1956 issue.

## AWARD FOR TECHNICAL ARTICLES

The Publications Committee of the Victorian Division of the W.I.A. announce that the annual award has been granted to H. F. Ruckert (VK2AOU), 25 Berrille Road, Beverly Hills, N.S.W., for his series of articles dealing with t.v.i.

if these two methods are used, and you will have a quick reply to the question, "Did you receive my card old man?"

VK—TWO LETTERS			
Call		QSL	
○ 5JO	Joe	S	R
5XO	Alex	S	R
5DO	Rex	S	R
7JO	Jim 70w. 21 Mc.	R	
6MO	Allan	S	
6BO	Rolo 21 Mc.	S	R
○			

Example of first page indexed under letter "O"

## HINTS AND KINKS

### CABLE SOCKETS

When connections are made to an item of radio equipment by flexible cable, it is sometimes convenient to mount the plug on the chassis and the socket on the end of the cable. Octal bases removed from defective valves can be used as multi-way plugs for this purpose, but the corresponding valve sockets require a protective casing or shroud to make them suitable for mounting on the cable. The aluminium cans in which 35 mm. film cassettes are supplied are the right size and suitable material.



1.



2.



3.

A line is drawn round the can about three-quarters of an inch from the bottom, and two fixing lugs are marked out on opposite sides (Fig. 1). The screw thread is cut away from the mouth of the can, and cuts are made down both sides of each lug. The lugs are then bent outwards at a right angle,

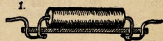
and the remainder of the can cut down to the marked line (Fig. 2). A stout pair of scissors can be used if no metal shears are available.

The fixing lugs are drilled and bolted to the fixing holes in the valve-holder, then trimmed to shape. A suitable sized hole is drilled in the bottom, or side, of the can for the cable entry, according to the type required; the hole should be lined with a rubber grommet. A lining of thick paper or thin cardboard is placed round the inside of the can to guard against accidental short circuit to the metal (Fig. 3).

—S. J. Lloyd, VK3AST.

### SIMPLE GROUP BOARDS

Small components, such as resistors and condensers, are best mounted on group-boards, if the circuit and layout will allow, and construction is simplified if each board can be made to measure. Cardboard impregnated with shellac is a satisfactory substitute for the laminated phenolic compounds generally used, and is very cheap and easy to work. The sheets of thick cardboard used for packing X-ray films are particularly suitable, and when treated with shellac yield a product similar to Paxolin.



The boards are cut to size and shape before impregnating, soaked in a thin solution of shellac in methylated spirit, and dried thoroughly. Commercial shellac varnish can also be used, after thinning with spirit. The easiest way to mount small components on the board is to push the wire ends through holes in the board, cut off short, and bend over to anchor. Interconnecting leads are then soldered directly to the wire ends on the underside of the board (Fig. 1).

To provide scope for later changes, however, it is better to fix soldering tags to the board with small rivets or screws and nuts (Fig. 2).

A cheaper way is to use brass paper-fasteners as anchoring points. They are pushed through holes in the board, the ends cut short, and opened out; the component is then soldered to one arm of the fastener and the connecting leads to the other (Fig. 3).

If the group-board is to be mounted in contact with a metal chassis, a sheet of thinner cardboard may be similarly treated with shellac and mounted underneath, to insulate the connections from the chassis.

—S. J. Lloyd, VK3AST.

# 1955 VK-ZL DX CONTEST RESULTS

## AUSTRALIA

C.W.—	Total	40	20	15	10
Call					
VK2GW	3326	773	1745	808	—
VK2AHH	1800	156	1269	375	—
VK2QL*	1338	352	730	241	—
VK2XZ	993	993	—	—	—
VK2PX	713	—	713	—	—
VK2HZ	677	647	30	—	—
VK2JY	585	—	498	87	—
VK3PG	2696	30	1767	783	116
VK3IW	1335	73	1172	90	—
VK3XB	1073	743	330	—	—
VK3CX	1072	—	1072	—	—
VK3HL	1005	—	1005	—	—
VK3JA	958	—	727	231	—
VK3VF	951	—	951	—	—
VK3AHM	648	—	648	—	—
VK3ZA	572	572	—	—	—
VK3PL	504	—	504	—	—
VK3AHH†	117	—	—	—	—
VK4SE	1100	—	723	377	—
VK5RX	1188	—	1188	—	—
VK5WO	677	—	633	44	—
VK5JT	500	—	500	—	—
VK6RU	2457	416	1242	784	15
VK7UW	1450	333	1117	—	—
VK7KM	413	413	—	—	—
VK9DB	1769	114	468	1167	—

\* Includes 80 mx score.

† 80 mx only.

## PHONE—

Call	Total	40	20	15	10
VK2AHH	886	45	709	132	—
VK2GW	479	15	375	89	—
VK2AKV	444	—	349	80	15
VK4SF	1923	60	1215	618	30
VK3MS	1489	—	1489	—	—
VK5WO	314	—	314	—	—
VK6RU	583	—	305	278	—
VK9DB	1398	—	461	922	15

## LISTENERS—

VK2—N. L. Dash	—	—	—	—	1142
VK3—G. R. Morris, WIA-L3017	—	—	—	—	750
VK2—W. Davey	—	—	—	—	588
VK3—M. Ide, WIA-L3015	—	—	—	—	551
VK7—R. de Balfour	—	—	—	—	158
VK6—F. H. Price, WIA-L4222	—	—	—	—	110

## NEW ZEALAND

C.W.—	Total	40	20	15	10
Call					
ZL1AH	4285	537	2298	1206	244
ZL1MQ	2583	260	1668	404	251
ZL1GX	725	—	621	89	15
ZL1PN	713	713	—	—	—
ZL1MT	423	—	378	30	—
ZL2GS	2635	—	1928	707	—
ZL2AFZ	1890	—	1890	—	—
ZL2ARL	1053	59	633	361	—
ZL3JA	2392	514	1878	—	—
ZL3LL	1167	1167	—	—	—
ZL4CK	1823	299	1509	15	—
ZL4GA	1024	—	1024	—	—

## PHONE—

Call	Total	40	20	15	10
ZL1MQ	1084	75	698	169	142
ZL1PA	503	—	503	—	—
ZL2AJB	239	—	—	—	239

## LISTENERS—

ZL1—C. N. Arvidson, ZL111	—	—	—	—	559
ZL2—R. E. Lepper	—	—	—	—	524

## OVERSEAS

C.W.—	Pts.	C.W.—	Pts.
CX2AM	48	PA0ZL	84
DL3DD	198	PA0OI	4
DM2ABK	135	PA0RJC	1
DL7EN	91	PJ2AN	72
DL1QT	63	PY1ADA	570
DL1EJ	9	PY2AFS	270
DL1YA	1	PY1ANR	126
EA3GF	28	PY3QX	12
EI2T	9	PY2BNX	28
F8RM	35	SM5LL	400
F8AT	35	SM7AVA	319
F9VZ	30	SM3AKM	280
F9MS	28	SM5CO	231
F3JA	1	SM5DW	200
FK8AC	120	SM6VY	25
FK8AO	98	SM5BTX	1
G6XL	198	VE7ZK	704
G2HPF	40	W1MX†	261
G3GSZ	18	W1RWP	128
G3GXO	12	W1UGH	45
GI4RY	28	W1NLM	15
H8DBD	4	W1HV3	12
IIQJ	32	W1MAN§	6
JA2BB	693	K21AN	940
JA1CR	627	W2WZ	680
JA1SR	390	W2EQS	102
JA1ACA	160	W2FBS	66
JA2BL	98	W2CC	15
JA7AD	98	W3VKD	657
JA1NI	6	W3EPR	40
JA8AA	1	W4KVX	558
KG1KK	9	W5VHR	968
KG6AGC	360	W5CAY	138
KJ6FAB	28	W5DXW	108
LA1AD	1	W5OLG	105
LU7JO	30	W6BYE	1221
OD5LX	28	W6LDD	1067
OE1ER	168	K6DDO	78
OH1PW	178	W7SFA	1331
OH6OB	152	W7PQE	935
OH1TI	112	W8JIN	680
OH6QZ	112	W8UVZ	96
OH2NQ	35	W9ABA	378
OH2VZ	25	W9FKC	72
OH2XX	24	W0BMM	35
OH3SR	24	XE1XB	224
OH2VN	16	YU3BC	462
OK1KI	84	YU2HO	147
ON4FU	77	9S4AX	104
OZ3FL	105		

† Multiple operator.

§ Check logs.

## PHONE—

C.W.—	Pts.	C.W.—	Pts.
CE2DD	198	OH2OV	112
CX2CO	550	OH5QN	4
DL1UX	280	OH3SR	1
DL1RX	60	ON4LJ	4
DL6WM	28	OZ7OP	1
EA2CK	9	PA0NU	340
F9RM	28	PI1J	260
G3FPQ	91	PA0JA	70
G6XL	16	PY2AHS	517
HC1ES	168	PY1NC	117
HK3PC	460	PY4ZS	112
HK4DP	180	PY1ANR	1
I1TDJ	70	SM5DW	4
JA3BB	620	SM3BIZ	4
KA2AK	510	SM5CO	1
JA2BL	78	TG8AD	864
JABMG	50	W3VKD	2
JA1CO	30	W2DJE	264
JA8AA	1	W6BYE	160
LU7AAT	340	W7SFA	333
LU4DMG	220	W8JIN	208
		W0BBS	6

§ Check log.

## Other Check Logs—

C.w.: HB9GY; Phone: KH6BES and ON4ZC.

## LISTENERS—

Switzerland—E. Heritier	30
Japan—Mitsuru Sano	341
Bulgaria—Mladen Georgiev	175
England—J. L. Hall, BRS19107	390
R. W. Thomas, BRS15822	310
Finland—Kal. Lindfors, OH2-413	30
Norway—F. S. Aabech, LA-M-3053	162
A. L. Sangwill, LA-M-3057	—
Netherlands—H. Frieke, NL864	4
U.S.A.—Ben Adams, Jr., W2-SWL	60

# Low Drift Crystals FOR AMATEUR BANDS

ACCURACY 0.02% OF  
STATED FREQUENCY

3.5 Mc. and 7 Mc.

Unmounted	£2 10 0
Mounted	£3 0 0

12.5 and 14 Mc. Fundamental Crystals, "Low Drift," Mounted only, £5.

THESE PRICES DO NOT  
INCLUDE SALES TAX.

Spot-Frequency Crystals  
Prices on Application.

Regrinds ..... £1/10/0

## MAXWELL HOWDEN

15 CLAREMONT CRES.,  
CANTERBURY, E.7,  
VICTORIA

# QQE03/12—DOUBLE TETRODE

The QQE03/12 is an indirectly heated miniature r.f. double tetrode intended primarily for use as a driver, output amplifier or frequency multiplier at frequencies up to 200 Mc. It can also be used as a Class B audio frequency power amplifier and modulator.

The tube is rated to dissipate 5 watts at each anode in continuous service. It is internally neutralized. The heater is designed to withstand the battery voltage fluctuations encountered in mobile service.

## GENERAL DATA

**Cathode:** Indirectly heated, oxide coated.

Heater sections in Parallel Series  
Heater voltage, 2 ..... 6.3 12.6 V.  
Heater current ..... 0.82 0.41 A.  
1—Occasional operation at 5.3 or 7.5 volts with parallel connected heaters (15.5 or 15.0 volts with series connection) is permissible.  
2—The tube may be used with only half the heater energized during the stand-by period of a transmitter in order to reduce heater current consumption during this time.

## Direct Interelectrode Capacitances:

	Each unit in p.p.f.	Both units in p.p.f.
Output capacitance	2.6	1.4
Input capacitance	6.2	5.1
Anode to grid No. 1 (internally neutralized)	0.1 max.	p.F.

## Amplification Factor (each unit):

Grid No. 2 to grid No. 1, 7.5.

## Mutual Conductance (each unit):

At anode current of 30 Ma., 3.3 Ma./V.

**Mounting Position:** Any. If the tube is mounted in a horizontal position it is essential that pins 2 and 7 are placed in a vertical line.

**Cooling:** Radiation and convection. The use of a closed screening can is not permissible.

## Size:

Overall length 78 mm. max.  
Seated length 72 mm. max.  
Diameter 22 mm. max.

## Base:

Novol.

Socket: 5908/36.

Pin 1—control grid g<sub>1</sub> of unit No. 1.  
Pin 2—cathode k and beam plates s.  
Pin 3—control grid g<sub>2</sub> of unit No. 2.  
Pin 4—heater f.  
Pin 5—heater f.  
Pin 6—anode a of unit No. 1.  
Pin 7—screen grid sg<sub>1</sub> (both units).  
Pin 8—anode a' of unit No. 2.  
Pin 9—heater mid-tap f.

## H.F. CLASS C TELEGRAPHY

(up to 200 Mc.)

**Operating Conditions** (2 units in p.p.)  
—I.C.A.S.—

Frequency	200	250	200 V.
Anode voltage (= supply voltage)	300	250	200 V.
Screen grid voltage	200		
Control grid bias	-45		V.
Screen grid dropping resistor	27	8.2 k.	
Common control grid resistor	18	15 k.	
Peak grid-to-grid driving voltage	130	120	130 V.
Anode current	50*	40*	42*Ma.
Screen grid current	3	2.4	3.1 Ma.

Control grid current	1.5*	2.5	3 Ma.
Driving power	0.1*	0.15	0.18 W.
Anode input power	15*	10*	8.4*W.
Anode dissipation	5.6*	3.5*	3.4*W.
Screen grid dissipation	0.6	0.45	0.55 W.
Output power	18.5	13	10 W.
Efficiency	62	65	60 %
Useful output power in load	16	11.2	9 W.

\* Per Section.

## H.F. CLASS C ANODE AND SCREEN

### GRID MODULATION

(up to 200 Mc.)

**Operating Conditions** (two units in p.p.)

	I.C.A.S.
Frequency	200 Mc.
Anode voltage (= supply voltage)	200 V.
Screen grid voltage	173 V.
Common control grid bias resistor	15 k.
Peak grid-to-grid driving voltage	130 V.
Anode current	2 × 43 Ma.
Screen grid current	3.1 Ma.
Control grid current	3.3 Ma.
Driving power	0.2 W.
Anode input power	2 × 8.6 W.
Anode dissipation	2 × 3.7 W.
Screen grid dissipation	0.54 W.
Output power	9.8 W.
Efficiency	57 %
Useful output power in load	8.8 W.

## A.F. CLASS AB AMPLIFIER OR MODULATOR

### Operating Conditions—Class AB1

Anode voltage	300	250	200 V.
Screen grid volt.	200	200	200 V.
Cont. grid volt.	-21.5	-21.5	-21.5 V.
Load resistance between anodes	10	8	6.5 K.
Driving voltage peak to peak	43.5	44.5	43.5 V.
Anode current	36*	34.5*	33*Ma.
Screen grid current	6.3*	6.2*	7*Ma.
Anode input pow.	10.8*	8.65*	6.6*W.
Anode dissipation	4.3*	5.5*	3.1*W.
Screen dissipation	1.3*	1.3*	1.4*W.
Output power	12	9.3	7 W.
Total distortion	2.5	2.7	3.2 %
Efficiency	56	54	53 %

\* Per Section.

### Operating Conditions—Class AB2

Anode voltage	300	250	200 V.
Screen grid volt.	200	200	200 V.
Cont. grid volt.	-21.5	-21.5	-21.5 V.
Load resistance between anodes	6.5	5	5 K.
Driving voltage peak to peak	64	67	54 V.
Anode current	50*	50*	41.1*Ma.
Screen grid current	5.7*	6.5*	9.5*Ma.
Control grid current	0.56*	0.62*	0.22*Ma.
Driving power	0.02*	0.02*	0.01*W.
Anode input pow.	15*	12.5*	8.22*W.
Anode dissipation	4.3*	5.5*	3.8*W.
Screen dissipation	1.2*	1.3*	1.9*W.
Output power	17.5	14	8.7 W.
Total distortion	5	5.5	6 %
Efficiency	58	56	53 %

# QE04/10—POWER TETRODE

For use as h.f. amplifier, oscillator and frequency multiplier. The QE04/10 is an indirectly heated beam tetrode with aligned grid construction to minimize screen grid current. It is rated to dissipate a maximum of 7.5 watts in the anode, and is particularly suitable for use at frequencies up to 150 Mc. as high frequency amplifier or frequency multiplier.

## GENERAL DATA

**Filament:** Indirectly heated, oxide coated. 6.3V. (d.c. or a.c.) at 0.6 amp.

## Capacitances:

C<sub>g1</sub> = 0.1 pF.  
C<sub>gk</sub> = 8.0 pF.  
C<sub>ak</sub> = 3.4 pF.

## Amplification Factor:

Grid No. 1 to grid No. 2, 5.6.

## Mutual Conductance:

At anode current of 25 Ma., 1.9 Ma./V.

**Mounting Position:** Any.

**Cooling:** Natural.

## Size:

Overall length 3-1/16 inches max.  
Base diameter 1 1/8 inches max.  
Envelope diameter 1 1/8 inches max.

Socket: 40212.

## CLASS C TELEGRAPHY

### Operating Conditions

Frequency	3	3	20	20 Mc.
Anode voltage	300	300	300	300 V.
Screen voltage	150	250	150	250 V.
Cont. grid bias	-35	-50	-30	-60 V.
Anode current	40	43	43.5	43.7 Ma.
Screen current	7.2	6.6	4.7	5.9 Ma.
Cont. grid cur.	2.8	0.4	1.8	0.4 Ma.

Peak driving voltage	58	60	40	67 V.
Driving power	0.16	0.025	0.09	0.03 W.
Anode input	12	12.9	13.1	13.1 W.
Anode dissipation	4.9	4.8	5.8	5.2 W.
Output power	7.1	8.1	7.3	7.9 W.
Efficiency	59	62	56	60 %

Frequency	60	60	150	150 Mc.
Anode voltage	300	300	300	300 V.
Screen voltage	150	250	150	250 V.
Cont. grid bias	-30	-60	-30	-30 V.
Anode current	44	43	44	46 Ma.
Screen current	6.7	6.7	4.5	4 Ma.
Cont. grid cur.	1.9	0.5	1.5	0.4 Ma.
Peak driving voltage	48	68	52	57 V.
Driving power	0.09	0.04	0.08	0.03 W.
Anode input	13.2	12.9	13.2	13.8 W.
Anode dissipation	6.2	5.1	8.9	7.5 W.
Output power	7.0	7.8	6.3	6.3 W.
Efficiency	53	60	47	45 %

## CLASS C FREQUENCY MULTIPLIER

### Operating Conditions

Frequency	10/	25/	50/	75/
Anode voltage	300	300	300	250 V.
Screen voltage	250	250	200	200 V.
Cont. grid bias	-80	-120	-120	-120 V.
Anode current	41.2	43.3	38.4	36.8 Ma.
Screen current	8	5.5	2.6	2.1 Ma.
Cont. grid cur.	0.8	1.2	1.5	1.1 Ma.
Peak driving voltage	81	124	120	144 V.
Driving pow.	0.065	0.15	0.2	0.16 W.
Anode input	12.4	13	11.5	9.2 W.
Anode dissipation	6.8	7.4	7.1	6.9 W.
Output power	5.6	5.6	4.4	2.3 W.
Efficiency	45	44	38	25 %



# AMATEUR CALL SIGNS

FOR MONTH OF APRIL, 1956  
(Continued from last issue)

## CHANGES OF ADDRESS

- VK—**  
**3PY—K. A. Kimberley, 5 Dorr St., Enmore.**  
**2SA—W. E. Selmon, 77 Flora St., Kirrawee.**  
**2WP—W. F. Potter, 2 Patricia Ave., Charles-town.**  
**2XN—W. E. Gibbins, 13 Tupper St., Marrickville.**  
**22N—J. Brand, 428 Burwood Rd., Belmore.**  
**2ABT—J. E. Ash, Station: Dalgaroo St., Coona-barabran; Postal: P.O. Box 81, Coona-barabran.**  
**2ABU—M. L. Dan (Dr.), 10 Kulgoa Rd., Bellevue Hill.**  
**2ACO—C. H. Orr, 24 Noble St., Hurstville.**  
**2AFP—R. L. C. Groom, Keats St., Byron Bay.**  
**2AKU—J. Goughen, 23 Weedon Rd., Artarmon.**  
**2ALT—W. C. Asplet, 23 Abercorn St., Bexley.**  
**2ANR—N. F. Ritchie, 8 Bent St., Turner, Canberra, A.C.T.**  
**2AGR—R. W. Rose, 17 Brook St., Walsend.**  
**2ASO—A. R. Simpson, Station: The Carter St., Cammeray; Postal: P.O. Box 6, Cammeray.**  
**2ATH—T. L. Hooper, "Loango," Arterial Rd., St. Ives.**  
**2AVT—E. E. Tierney, 6 Beach Rd., Edgecliff.**  
**2ZAD—B. Holland, Station: Church Cottage, Cr. Bridge and Easworth Sts., West Tamworth; Postal: P.O. Box 5, West Tamworth.**

## Victoria

- 3DW—K. R. Cakebread, 45 Carrier St., Benalla.**  
**3EW—E. C. Wheeler, 31 Coughlan St., Kellor East.**  
**3NI—N. R. Boase, 1884 Malvern Rd., Darling.**  
**3TY—W. H. Murden, Station: C/o 3511, Lake Bala; Postal: P.O. Box 117, Campbell St., Swan Hill.**  
**3VM—E. H. Marks (Dr.), Heathered Rd., Sassafras.**  
**3XU—A. C. Weynton, 5 York Street, Spotswood.**  
**3ZR—G. C. Moody, 7 Mary St., Spotswood, W.14.**  
**3ABM—J. B. Watson, S.S. "Aftara," C/o MacDonald Hamilton & Co., G.P.O. Box 3862, Melbourne.**  
**3AJI—D. J. J. Ireland, 5 Rollings Rd., Upper Ferntree Gully.**  
**3AML—R. E. A. Grigson, "Avareast," Hughes St., Upwey.**  
**3AMS—A. M. R. Smallwood, Foster, South Gippsland.**  
**3AUC—A. D. Cook, 244 Dandenong Rd., East St. Kilda.**  
**3AUD—A. V. Dwan, Portable, Blackwood P.O., via Trentham.**  
**3AZR—P. C. Ryan, 72 O'Hara St., Coburg, N.13.**  
**3ZBJ—G. S. Jennings, 665 South Rd., Moorabbin, S.20.**  
**3ZBZ—A. W. M. Buesst, 5 Torresdale Rd., Too-rak, S.E.2.**  
**3ZCR—H. C. Owen, 5b Fitzroy St., Sale.**

## Queensland

- 4PR—W. J. Rafter, 25 Willandra St., Alderley.**  
**4SH—J. J. Henkel, 113 Preston Rd., Wynnum West.**  
**4ZAG—J. C. E. D'Alton, M.S. 1652, Redcliffe.**  
**4ZAR—N. A. Roberts, 21 Wilkinson St., Rock-hampton.**  
**South Australia**  
**5DT—B. Hannaford, Station SAU, Anstey St., Port Augusta.**  
**5EW—W. E. Evans, C/o U.S.A.F. Team 421, Alice Springs, N.T.**  
**5FF—R. F. Farmer, Portable, C/o Mr. C. W. Farmer, 7 Kirkealdy Rd., Grange.**  
**5GW—N. G. Wallace, 23 Lauder Ave., Sefton Park.**  
**5LH—R. J. Strachan, 31 Spencer Ter., Port Augusta.**  
**5SL—L. M. Stoberg, 16 Rodney St., Woodville.**  
**5UX—L. W. Wallbridge, Saddledorothy.**  
**5VC—J. G. Mason, 15 Helen St., Pennington.**  
**5WP—A. H. Watts, 35 College Rd., Adelaide.**  
**5YL—L. Lind, 72 Harvey Rd., Elizabeth Bay.**

## Western Australia

- 6AT—A. T. G. Hanson, 28 Northampton St., East Victoria Park.**  
**6BE—J. R. Elms, 29 Central Rd., Kalamunda.**  
**6BY—B. R. Aubrey, C/o Weather Office Aero-drome, Forrest.**  
**6EL—E. Langenschied, 225 Evans St., Geraldton.**  
**6HC—C. Hitchens, 50 Sorrento St., Nth. Beach.**  
**6IG—I. H. Gribler, 81 Moreland Rd., Attadale.**  
**6JN—J. W. G. Nind, Lot 1175, Wellington Rd., Morley Park.**  
**6JY—B. Bellringer, 97 Grosvenor Rd., Mt. Law-ley, Perth.**  
**6LM—L. Morrison, 35 Hudson St., Bayswater.**  
**6MS—J. H. Sander, 1339 Albany Highway, Can-nington.**

**6MZ—F. T. Manure, Jindong, via Busselton.**  
**6OY—T. H. Mitchell, C/o Radio Station 6NA, Narrogin.**  
**6SK—A. A. Skinner, 106 Prinsep St., Norseman.**

## Tasmania

- 7KB—I. R. Pearson (Dr.), 17 Linton St., Upper Burnie.**  
**7PM—P. D. Mulligan, C/o TNT Private Bag, Kelo.**  
**Territories**  
**9WK—W. K. Webster, D.C.A., Port Moresby, Papua.**  
**9ZAL—R. F. Lloyd, Dpt. of Works Plats, Badliih, Port Moresby.**

## CANCELLED CALL SIGNS

- VK—**  
**New South Wales**  
**2AC—A. G. Bradley.**  
**2BE—W. A. Easterling, Now VK3ABL.**  
**2DJ—D. E. Laing.**  
**2II—M. J. Moore.**  
**2JM—G. E. Meaton.**  
**2LY—S. L. Skinner, Now VK3APL.**  
**2MX—M. R. Cran.**  
**2OV—M. N. Russell-Clarke, Now VK3AGA.**  
**2BC—C. B. Jones.**  
**2AAE—N. K. J. Felstead, Now VK3AAI.**  
**2ADY—Glenelville District Experimental Radio Club.**  
**2ALW—B. E. Matheson.**  
**2AGG—R. E. Gunnourie.**  
**2ATV—K. L. Green, Now VK3KG.**  
**2AUD—K. E. McDonald.**  
**2ZBY—J. T. Jarrott, Now VK3ZBC.**  
**2ZCL—L. T. McLaughlin, Now VK3GV.**  
**2ZCT—K. A. Thompson, Now VK3ZBT.**

## Victoria

- 3DF—G. P. D. Clarke, Now VK5GP.**  
**3IJ—D. R. Twigg, Now VK1IJ.**  
**3QY—C. W. Richardson, Now VK4QZ.**  
**3TL—R. E. Trebilcock.**  
**3VC—B. K. Wicks.**  
**3AIR—M. Ireson.**  
**3AJD—A. J. Egan.**  
**3ANY—J. H. Blake.**  
**3AOF—P. P. O'Dwyer.**  
**3APL—J. W. London.**  
**3AGR—M. M. Ray.**  
**3ARH—A. A. Hallamore, Now VK5RH.**  
**3ATG—E. Marks (Dr.).**  
**3ZAP—K. J. Love, Now VK3AWU.**

**Queensland**  
**4DB—D. S. Browne, Now VK5SB.**  
**4EN—E. D. Neale.**

## South Australia

- 5AH—F. L. Williamson.**  
**5AC—A. J. Cooley.**  
**5DV—D. B. Vaughan.**  
**5GY—C. W. Noble.**  
**5JB—M. G. White.**  
**5PC—H. F. Cooper.**  
**5TF—H. F. Fuller.**

**Western Australia**  
**6ZAH—T. H. Talbot, Now VK6TH.**

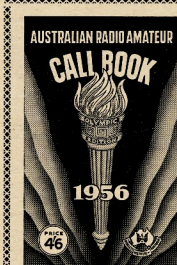
**Tasmania**  
**7IJ—D. R. Twigg, Transferred to VK1IJ, then to VK1IJ.**  
**7VS—I. L. Griffin (Rev.), Now VK3VS.**

**Territories**  
**1RA—R. W. Allison (Dr.), Now VK3AEA.**

## FOR MONTH OF MAY, 1956

## NEW CALL SIGNS

- VK—**  
**Australian Capital Territory**  
**1ET—E. A. Turney, 13 Stephen St., Ainslie.**  
**1EY—J. P. Meehan, C/o Sgt's Mess, R.A.A.F. Station, Canberra.**  
**1GU—E. H. Cox, 8 Wickham Crescent, Red Hill.**  
**1HV—H. V. J. Hutton, Royal Military College, Duntroon.**  
**1JG—N. S. Hill, 9 Arunta Street, Narrabundah.**  
**1PT—W. F. Phillips, 31 Hackett Gardens, Turner.**  
**1PM—R. E. W. May, 38 Meehan Gardens, Narra-bundah.**  
**1RM—Royal Military College Radio Club, Duntroon.**  
**1TV—R. F. J. Lenon, 13 Hackett Gardens, Turner.**  
**1UZ—N. G. Hansen, 5 Towns Cres., Turner.**  
**1IUB—B. B. Browne, 71 Eden St., Ainslie.**  
**1ACA—Canberra Radio Club, Station: Hut No. 3, Riverside, Barton; Postal: P.O. Box 59, Kingston.**  
**1AGC—A. Morris-Rees, Kingston Guest House, Kingston.**  
**1ADG—F. Avenit, 12 Campbell St., Ainslie.**  
**1AIL—K. L. Finney, 11 Westgarth St., O'Connor.**  
**1ALR—L. R. Burston, Officers' Mess, R.A.A.F. Station, Canberra.**  
**1ANR—N. F. Ritchie, 8 Bent St., Turner.**  
**1AOP—E. Pearce, 19 Meehan Gardens, Narra-bundah.**



## ★ RIGHT OFF THE PRESS! Aust. Radio Amateur Call Book

Available now from—  
DIVISIONS OF THE W.I.A. AND  
LEADING BOOKSELLERS IN ALL  
STATES OF AUSTRALIA.

ORDER YOUR COPY—4/6

Postage 6d. extra

Published by the Wireless Institute of Aus.

THIS 1956 EDITION CONTAINS—

- An up-to-the-minute listing of Station Call Signs and Addresses of Licensees of Transmitting Stations located in the Commonwealth of Australia and its Mandated Territories including VK1 Australian Capital Territory and Z Call Signs.
- Wireless Institute of Australia Listeners' Numbers.
- One thousand additions, alterations and deletions since last edition, making over two thousand amendments since the 1954 edition.
- Up-to-date list of Australian Broadcasting Stations, F.M. Stations, and Television Services.
- DX Countries, Prefixes and their Zones.
- World-wide Awards available to Amateurs and Short Wave Listeners.





# TELEVISION RECEIVERS

## Intermediate Frequency Recommendations by the Australian Broadcasting Control Board

Of interest to all Amateurs is the present recommended set-up of Intermediate Frequencies for Television Receivers.

As far back as 1951, the Australian Broadcasting Control Board "reached the conclusion that the most suitable choice would locate the picture and sound carriers in the band 30-40 Mc."

In regard to the 20-30 Mc. band, the Board stated: "There are, however, a number of high-powered stations operating in this band in Australia, not far from capital cities. It is desirable also to avoid the 28-29.7 Mc. amateur band, because there are many amateur transmitters of moderate power in capital cities, and they are potential sources of interference. The use of intermediate frequencies in the 20-30 Mc. band would also involve intermediate frequency harmonic interference with the second channel, and image interference between the 62.5-70 Mc. channel and the channels in the 90-108 Mc. band. The use of intermediate frequencies in the 40-50 Mc. band (as is now being adopted in the United States of America) is impracticable if a channel as low as 44 Mc. is employed. The remaining choice is in the 30-40 Mc. band, and intermediate frequencies can be chosen there, to avoid image interference and the majority of the spurious responses and intermediate frequency harmonics which are likely to be serious. At the same time oscillator interference occurs in bands likely to cause little interference to other services. Where oscillator interference from receivers tuned to one channel falls in other television channels, it is considered possible to avoid interference by allocating such channels to stations in different districts.

"These considerations of intermediate frequency selection are based on the assumption that a conventional receiver design is employed. The Board, however, is not unmindful of the probability that a large percentage of receivers designed will be of the inter-carrier type which presents substantial advantages to the receiver designer. The problem, however, is not materially affected by this factor as the intermediate frequencies chosen will be suitable for use with such receivers. The chief difference lies in the fact that for the higher channels, oscillator frequencies can be below the channel frequencies, so that in these cases the oscillator can be in a different place in the frequency spectrum.

"For the reasons mentioned above and a number of other more detailed considerations, the Board is of the opinion that intermediate frequencies in the 30-40 Mc. band are most suitable for recommendation to the industry . . ."

Reaching more specific detail at a later date (1955), "In previous reports, the Board drew attention to the need for

determining a standard intermediate frequency for television receivers and stated its intention of conferring with manufacturers on this important matter. It is essential that standard intermediate frequencies for vision and sound should be employed for all receivers used in the Commonwealth, in order that the Board may be able to make frequency allocations for television stations in specific locations in such a manner as to avoid mutual interference between television and other services arising from image responses, intermediate frequency difference responses and beat oscillator radiation. If a multiplicity of intermediate frequencies were to be used in receivers, it would be impracticable to ensure maximum protection from interference, and receivers using non-standard intermediate frequencies could not be used on certain television channels without retuning of the intermediate frequency sections.

"During the year, the Board had several discussions with representatives of the receiver manufacturing industry arranged through the Associated Chambers of Manufacturers of Australia, as a result of which the Board decided to recommend to manufacturers that the following intermediate frequencies should be employed in all television receivers used in Australia:-

Sound carrier .... 30.5 Mc.  
Vision carrier .... 36 Mc.

It was agreed that these frequencies should be adhered to within  $\pm 0.25$  Mc. and that the oscillator frequency should be above the channel frequency. Although representative manufacturers expressed the view that higher values of intermediate frequencies would, for a number of reasons, be preferable, it was agreed that the above standard frequencies should be used because of the difficulties of protecting higher frequencies from interference from industrial, scientific and medical equipment in the internationally assigned band of 40.68 Mc. The Postmaster-General's Department has agreed to arrange frequency assignments in the band encompassing the above intermediate frequencies as far as practicable to ensure protection of television services from interference by other services."

### AUSTRALIAN V.H.F. RECORDS

Band Mc.	Stations	Date	Miles Rec'd	World
50	VK5KL-WTACS/KH6	26/8/47	3355	10500
	VK6HK-VK2CG	3/1/55	3028	
	VK6WG-VK2CG	3/1/55	3016	
	VK5DB-ZL8GS	28/12/53	2904	
	VK3IM-VK2CB	30/12/53	2405	
	VK7BQ-VK5DB	—	2211	
	VK7LZ-VK5DB	—	2211	
144	VK5GL-VK6BO	31/12/51	1338	1400
	VK5QR-VK6BO	9/2/52	1328	
	VK3GM/3-VK7LZ/PF	9/3/52	317	
288	VK5MT/3-VK5RO/3	13/4/52	106	
	VK3AF/3-VK3AAF/3	21/3/54	63.8	
	VK5BO-VK6DW/6	1949	25	
576	VK3ANW-VK3AKE	11/12/49	81.6	
2300	VK3ANW-VK3XA	18/2/50	9.1	150

The above contacts are best known to date, but what of VKs 2, 4, and 7 contacts? Please send FULL details of your best contacts through your Division to F.R.E. giving particulars of both stations' locations at the time of contact so that your record may be listed above.

**They're all at U.R.D.**

Here we show you just a FEW of the famous brand names available from our new Warehouse in the Hi-Fidelity, TV, Electronics and Electrical field.

Orders and enquiries will be given prompt, courteous attention.

Logos and brands visible include: AWA, IRL, GOODMAN'S, Technico, IRIMAR, DUCON, National, Ediswan, ELIX, Ferrograph, QUAD II, HECLA, M.B.H., Polar, and others.

**U.R.D. M.B.H. Polar**

UNITED RADIO DISTRIBUTORS PTY. LTD  
175 PHILLIP STREET, SYDNEY. BL 3954. BOX 3456, G.P.O.

transistors

tv

fm

audio

hi fi

ultra linear

new valves



# 1956 radiotronics

During 1956, "Radiotronics" will feature exclusive articles on transistors, ultra-linear equipment, T.V., F.M., Audio, Hi-Fi, and the latest information on all new valves.

Men in both the amateur and professional fields find that "Radiotronics" keeps them abreast of the latest development in the Electronic World.

Subscription: 10/-

Please do not send stamps.

AMALGAMATED WIRELESS VALVE COMPANY PTY. LIMITED

47 YORK STREET, SYDNEY, N.S.W.

VC13-56



## YL CORNER

Calling all YLs and XYLs. This is your column and here in it we would like to have your news. Very few of the Amateur fraternity realise that there are twelve licensed YL operators in VK land, some of whom have been licensed for over twenty-five years. Through this column we hope to introduce them to you along with a description of their rigs, their activities in Amateur Radio, their interests other than Amateur Radio and their domestic commitments. In fact all about what goes to make one of the female sex become what is known as a "YL".

We also have room here, too, for contributions from XYLs for some of those funny little stories such as "I married a radio crank", or "There's a queer sort of wireless man lives at our place" or "Life with the OM", and how Amateur Radio does or does not fit in with the rest of family life. What about writing us an amusing article along these lines? What about your harmonics, do you put a spoke in Dad's works? Let's hear about some of the funny things they do.

★

### HAMS—AS SEEN BY AN XYL

During the earlier part of my life, I was unaware of the existence of "hams" apart from the variety which provides a tasty dish. (No doubt some radio hams could do that, too), but to get back to the point, I was quite unaware there existed a band of radio fiends so named. Then along came my husband, and proved to be one of these things in disguise, as I found out merely by trying vainly to decipher an extraordinary muddle of wriggly lines interposed between peculiar oblongish circles situated here and there. These, I was informed, represent valves. Thus enlightened, I promptly forgot the incident. But the crafty devil had just started his onslaught.

Gradually, I became aware his interest was not always with me. This became evident by the unintelligible answers to some of my conversation. He preferred to read a thing called "Amateur Radio," which seemed to provide no end of interest for him.

One night, in the throes of a romantic novel, I was distracted by such words as "fidelity," "osculation," and someone called "Millie Amp"—whoever she was—emitting from the lips of my husband.

I decided to look into this book of his, but found my suspicions unfounded. In fact, I found the darn thing unreadable. It was then patiently explained that oscillation was the correct word, and that Millie Amp was no femme fatale, but precisely what it said—a very small portion of an Amp.

Next move was the arrival of some junk—the "Hams" call it gear—but to me it's still junk. This consisted of a conglomeration of odds and ends, containing, so I was told, among other things, wires and bottles. The only bottles I've seen are the beer bottles he uses to fortify himself while listening

to a character called Jim give out each Sunday morning on a contraption referred to as a frequency. The said Jim seems of the opinion that something called a VK something-or-other tries incessantly to push him off a band of some description into oblivion each time he attempts to broadcast to his addicts.

This, I agree, is very inconsiderate and I would push them right back. Unfortunately, my husband does not seem to think this would solve the problem.

Sitting in pride of place in our sitting room is a horrible shabby box-affair—a moth-eaten piece of cloth protruding out the front. This, dear reader, is a speaker cabinet, and "Hams" seem unanimous in their approval of these in preference to a more up-to-date version. I don't myself, but then that is of no consequence.

Recently I caught this "Ham" of mine sneaking a form away in order to gain a ticket, which he informs me will allow him to carry out some experiments. He needn't add anything to that—and oh, heaven help me if he gets the darn thing.

—"SQUAWKER."

P.S.—I've just heard something about woofers, squawkers, and tweeters. Wouldn't it?

★

I remember hearing of one young harmonic who took some of Dad's resistors and condensers to school and swapped them to some of the older boys for cigarette cards. He was so popular with the older boys and he himself felt he had made such a good bargain as there were plenty more "densers" and "zisters" at home in Dad's box.

One small item of news I heard recently is that there are two OMs thumbing a lift into the W.I.A. meetings since their respective YLs, Mrs. J. Zansibar-Sugar (Gwendra Hull) and Mrs. J. Tare-Fox (Nina Dennis), have got their driving licences. Their poor OMs are having considerable difficulty in getting even a little loan of the keys of the car these days. You know, their husbands should really be very pleased, after all that makes two more potential chauffeurs for the fox hunts and 80 mx tx hunts.

Well now, what about it? We'll hope to have those contributions rolling in very soon. Contributions should be addressed to the Sub-Editor for VK3, Mrs. Phyl Moncur, 235 Union Road, Ascot Vale, Vic.

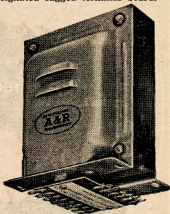
In next month's YL Corner we will introduce you to VK3YL, Austine Henry, the first, in the world to win the YL-WAC-YL.

## TRADE REVIEW

### Power Transformers by A & R

A. & R. Electronic Equipment Co. Pty. Ltd. have just released a new range of power transformers covering all standard voltages, with current ratings from 100 to 200 Ma., and designed for a maximum temperature rise of 50° centigrade.

As illustrated, these vertically-mounted transformers are fitted with ventilated pressed steel covers, finished in A. & R.'s standard silver-grey ham-mertone, with black cores. All types have a neatly-designed and clearly-designated lugged terminal board.



Other additions to the range include step-down transformers of semi-portable and fixed installation types, and also available is a kit comprising a power transformer, power choke and frame output transformer for the Philips' television receiver circuit.

Accent is again on quality, and A. & R. have retained throughout the same high standard of performance and finish that characterises this Company's popular range of audio transformers.

These excellent transformers are now available in all States, and A. & R.'s distributors listed in the advertisement in this issue will be pleased to supply full details.

## Duralumin Aluminium Alloy Tubing for Radio Aerials

★ LIGHT ★ STRONG ★ NON-CORROSIVE

STOCKS NOW AVAILABLE FOR IMMEDIATE DELIVERY

ALL DIAMETERS— $\frac{1}{4}$ " TO 3"

RECOMMENDED FOR TELEVISION AND BEAM AERIALS

Price List on Request

## GUNNERSSEN ALLEN METALS

PTY. LTD.

88-92 YARRA BANK ROAD, SOUTH MELBOURNE

Phone: MX 4624 (9 lines)

Telegrams: "Metals," Melbourne.





## SHORT WAVE LISTENERS' SECTION\*

Some chaps think a lot about the elusive DX, but me, no! I'm spending a lot of time thinking about elusive correspondents for this page. Why? Worked All States isn't it with this. So come on VK6, 7 and 9. We'd very much like to hear from you. Now for all the news from VK2, 3, 4 and 5.

### NEW SOUTH WALES

Stan Abbey writes again this month and encloses a list of stations he has heard. He'd very much like to know how we down here manage to hear all the DX listed in our reports. Well, judging by his own list, he's not doing too badly himself. The weather at Coolamon hasn't been very pleasant and band conditions also have not been the best, writes Stan. Jack Ashby, the other s.w.l. in Coolamon, is understood to have been working hard lately and has not had much time for s.w.ling. Greetings to you Jack. Jack's gear consists of an Eddystone "640" with a preselector using an EF50 ahead of it, together with a five-tube home-brew for 20 mc, built into a rack and panel. The antenna is a centre fed 40 mc dipole. Jack 2AJO is still giving these two boys lessons in Amateur Radio, but evidently still finds time to get on the air. Sigs 3 x 9 on 80 mc down here Jim. For the information of other s.w.l.s, Jim does QSL.

Any other VK2 listeners can write to Stan Abbey at Mimosa Street, Coolamon, 68, and give him any information for this page to pass on to me.

### VICTORIA

A very interesting letter was received from Henry Zail, at Traralgon. Henry comes from Holland and has been in VK land about 2 1/2 years. Henry is using an AR7 rx, but does not particularly like the separate coil boxes associated with that make of rx. He has built a test oscillator, signal tracer and multimeter. An intercom. system he built was subject to squealing and hum, so he has dropped that project for the moment. Henry is studying

hard and soon hopes to sit for his ticket. One or two of you Traralgon boys may be able to get to know Henry and give him some assistance as he seems to be having a little trouble in his activities at the moment.

**June Meeting.**—At the meeting of the VK3 Group, Fred JVS gave us a talk on Construction and Operation of V.h.f. Gear. Fred discussed the building of simple converters for two metres and also stressed the usefulness of a grid dip oscillator in finding the band. Fred had brought some mobile gear along with which to demonstrate and at the conclusion of the meeting contacted Jim 3AJO on 2 mcs. Thanks very much for this very interesting evening, Fred.

**Comeing Events.**—As a result of a slight misunderstanding it was published that Geoff 3DF would be giving a talk at the July meeting of the Group. However, Geoff has moved to VK5 and therefore will not be available. Still come along to the meeting chaps. Remember, the Group meets at the rooms, 181 Queen Street, Melbourne, at 8 p.m. on the last Tuesday of each month. All who can attend are invited to join our Group in a visit to be made to "The Argus" newspaper office on Tuesday evening, 17th July. This visit is timed to begin at 9 p.m. and you are requested to be outside "The Argus," Cr. Elizabeth and Latrobe Sts., no later than 8.45 p.m.

### QUEENSLAND

Don Bryant keeps the VK4 boys on the map this month. Evidently they are hoping to increase the number of s.w.l.s. up there as they are going to send notices to schools and clubs advertising their meetings and activities. Don tells me he is in the Army sigs. Quite a number of Amateurs have first been bitten by the bug whilst in that outfit. He is putting up a new antenna. A ground plane, end fed dipole and a folded dipole. Boy, what an antenna farm he must have. He has about three skywires up already, I believe. Don says that he has plenty of room in the back yard and can also use the yard next door if he wishes. How wonderful! Personally I haven't time to swing a cat or a dud tube for that matter.

### SOUTH AUSTRALIA

We have now lost one VK5 correspondent and gained another. The annual meeting of the VK5 Group was held in June and the re-election of office-bearers resulted as follows: President, Jim Paris; Secretary, Len Cragen; Treasurer, Arch Halliday; and Correspondent, Mac Hilliard. I must offer my thanks to Len Cragen who has in the past done a very good job as correspondent, and welcome Mac Hilliard to the job. He won't last long in the job though I can tell you, you see he will soon be coming over to the premier State to reinforce the VK3 Group. We'll be glad to see you again Mac.

Prior to the annual re-election in the VK5 Group, the presentation of a Silver Cup was made to John Campbell, WIA-15011, who won the recent VK-ZL S.w.l. Contest. Congrats to you John. Runner-up in the contest was Len Cragen, to whom we also pass on our congratulations.

The July meeting of the VK5 Group will consist of a visit to broadcast station 5KA. Members of the VK5 Group are looking forward to the R.D. Contest to be held in August. QSL's received recently by some of the boys include GSHOI to John Campbell and CRTQ and ZS1KK to Mac Hilliard.

### PERSONAL PARS

Following the example of 2EL, I, too, am taking steps to form a spy club. However, they have not given me much dope as yet. Bert Stebbing has that big bus going again, but has not yet appeared with mobile s.w.l. gear. Michael Ide is settling into his new QTH, but was recently struck by the virus. Congrats on winning the listeners' section of the Fourth Virus Scramble. Michael. Arthur 3AHD is understood to be busily painting his latest acquisition. Yours truly has many plans in the melting pot at the moment, including a new 30 ft. mast, new antenna, converters for 14 and 23 Mc., QSL cards and ways and means of getting chaps in VK6, 7 and 9 to write. David 2ZAG (WIA-13063) seen in circulation again together with David 3ZAT (WIA-13027) who appears to be getting some new gear together. His car looks like a travelling radio warehouse at the moment. Something big is in the offing apparently.

\* Compiled by: Ian J. Hunt, WIA-LB007, 101 Robert Street, Northcote, Vic.

## SPECIAL

BRIGHT STAR RADIO are pleased to announce an addition to their line of Crystals. We are now manufacturing—

## VACUUM MOUNTED CRYSTALS

for general communication frequencies in the range 3 to 14 Mc.  
Higher frequencies can be supplied.

### ADVANTAGES OF THIS TYPE—

- (1) Approximately three times the activity of normal plated crystal due to the absence of air damping.
- (2) Better frequency stability due to the absence of air friction.
- (3) Plating cannot deteriorate with time and cause frequency shift.
- (4) Two or more crystals can be mounted in the one envelope and thus save space.

Price depends on the tolerance and frequency required, and will be quoted upon request.

BRIGHT STAR CRYSTALS may be obtained from the following Interstate firms: Messrs. A. E. Harold, 123 Charlotte St., Brisbane; Gerard & Goodman Ltd., 192-196 Rundle St., Adelaide; A. G. Healing Ltd., 151 Pirie St., Adelaide; Atkins (W.A.) Ltd., 894 Hay St., Perth; Lawrence & Hanson Electrical Pty. Ltd., 56 Collins St., Hobart; Collins Radio, 409 Lonsdale St., Melbourne; Prices Radio, 5-6 Angel Place, Sydney.

# BRIGHT STAR RADIO

46 EASTGATE ST., OAKLEIGH, S.E.12 UM 3387



# FIVE-5'S MEGACYCLES AND ABOVE

## NEW SOUTH WALES

Although several stations took part in the recently conducted 24 home station fox hunt only a few logs were returned to the contest manager, Horrie 2HL. Results: Win for Bob 2OA, who was followed by ZAFQ, 14 ZAFM 10, and ZCHF 6 points. John 2ATO was the mobile fox and made broadcasts from five different locations. Anyone desirous of knowing the exact locations of the fox should get in touch with Horrie 2HL.

Many new county stations are being heard and are in the best of the way. Stations include 2ZBK of Claymore, 2NS of Bathurst, 2ZAN Bathurst, 2ALU Cobar, and several other 2 mx DX Amateurs are about. Sid 2AVK, of Katoomba, is putting out good signals also. It appears that more and more Sydney 2 mx Amateurs are going mobile. Dick 2ZCF, Bob 2OA and 2AWZ have been heard recently. Almost any night and every week-end there is plenty of activity on the band. Have heard old-timer Don 2NO putting out a very good signal. Coastal stations should look out for 2LARB, who is running 100w, on 2 mx s.s. Another new station to listen for is 2TC of Bundanoon.

After the usual Sunday night broadcast on 3 mx on 24th June a surprise scramble was well attended and resulted in the following scores: 2ANP 19, 2HE 16, 2CA and 2ZCF 15, 2ZCF 14, 2HL 14, 2ZBN, 2ZBAQ, 2ZAV, 13, 2AC 11, 2AUA 9, 2ZAL 8, 2ZCH and 2AFM 6, 2JC 5. It is noteworthy that 2TX made his four contacts in less than five minutes of play.

News from the Northern Group v.h.f. is as follows: The only doings in the 56 Mc. spectrum is that Jack 2ADT has re-constructed his beam for 3 mx and has managed to get it stop his 50 ft. bush pole which is about 3 in. diam. at the top, and his tx has been altered. The 2 mx beam is becoming more encouraging.

New addition to the fraternity in this area is 2ZAD who has taken up residence at Tamworth. Frank 2ZAD is a member of the 2 mx beam and is building a rig for the band, but is continually being side-tracked, till it is believed that Ben 2ABT, of Conabaraban, is likely to take over the rig. The northern group will not let up on him now. Geoff 2VU has been altering his tx and when last heard had lost the band. Geoff is having a good time, but is having a good job Geoff and get that QV06/40 done. 2ANU listens each night from 9.30 to 9.50 pm, and his only contacts have been 2VU. Ken has heard 2EZ's carrier occasionally, and has run test transmissions for Tas 2GV, who is using a super-regen. at Ellistown, but results have been so far from satisfactory that 3 over 3 beam it is hoped that contact will be made. Further north to Inverell it is reported that Jack 2ADT and Ted 2ZXX have been ready to go.

The greater part of the Sydney V.h.f. Group meeting held on Friday, 6th July, was taken up by a most interesting lecture delivered by Mr. Harratt, of the P.M.G. Department's maintenance engineering section. He very ably explained 160 Mc. mobile telephone transmission techniques as well as micro-wave transmissions and pulse on 2000 Mc. and 4000 Mc.

We are all now eagerly looking forward to the mid-winter contest.

## VICTORIA

Roger Chosie, VK4X, was a very welcome visitor at the last fox hunt. Roger went along with the fox crew in a hunt that traversed South Yarra, St. Kilda, Albert Park and then on to Camberwell. At one stage when the fox was delayed with the red traffic lights and the fox crew had a few very tense moments of excitement when four head cars, 2ZAL, 3ZAL, 3ZAL and 3AOG came along the cross road and bent on getting through the lights while they were still green, sailed right into the fox car. The car was stopped and the fox noticed 3VZ on the opposite side of the road, also waiting for the traffic lights to change. The fox felt he just couldn't get out of this one, however, 3VZ was apparently so intent on listening to the signal that he forgot to look for the fox, and 3LN, the fox, was able to make a right hand turn immediately behind 3VZ's car and sneak away undetected. He then went and hid in a parking area amongst a lot of cars. He was soon ferried out here by 3AOG and 3ADU. This was really a relief to the fox as he was beginning to worry in case a parking attendant came along and demanded a parking fee.

The final location was at the home of associate member, George Robertson, in Camberwell. 24 of the gang, who included seven XYLA, had supper together and entered into an 89 QSO on the evening's chase. The winners were the two Rays, 3ZL and 3ZAF, second place went to the two Davids, 3ZAT and 3ZAG, and third place to 3AOG. Thanks are extended to George and Joan Robertson for opening their home to the Group. At the last V.h.f. meeting the Group was entertained with a very absorbing lecture on "Pulse time modulated v.h.f. radio telephone systems in Australia," given by Mr. Alan Hart, who is Divisional Engineer of the radio telephone section of the P.M.G.'s Department. This lecture was a follow-on to the lecture Mr. Hart gave us last year and he prefaced his lecture by a short run through the slides he had shown us last year so as to enable those who had not attended the previous lecture to be up to date with the rest of the members. From this point he then carried on with greater detail and added us further afield with his work in the radio telephone system. The whole lecture was again illustrated with slides, and perhaps because of Mr. Hart's particularly friendly personality, question time started in earnest right from the beginning of the lecture. Mr. Hart has the science of his work right at his finger-tips and appeared to enjoy the opportunity of answering questions.

During the general business of the meeting, David 3ZAG was presented with his certificate award gained for contacting 100 stations on v.h.f. bands. This is the fourth certificate awarded and David is the first "2" call to qualify for the award.

Are you ready for 56 Mc.? It has been reported that 2HL Amateurs were changed to the 56-80 Mc. band as from 1st June. There is generally a minor Interstate opening on these frequencies round about August, although the main DX season usually occurs during the summer months.

Keep a listen for Don 2RS, of Albury, who calls on sked with the beam on Melbourne, at 7.30 p.m. each evening, calling for five minutes then listening for five minutes. His frequency is 144.14 Mc. He has been worked by 2BQ lately, several times, and has been heard by a number of Melbourne stations.

Max 3ZCW worked 5MT on 19/6/56 at 9.30 p.m. 5MT was portable on Mt. Loder, east of Adelaide and was running 10 watts to a 522 and a 2 tube converter fed into his car radio, using a 3 element beam. Reports were 5 and 5 both ways. Max has purchased a QV06/40 and is hoping for big things in the very near future.

—Phyl Moncur.

## WESTERN AUSTRALIA

The monthly meeting of the V.h.f. Group was held on 9th June at 62AD's residence with the usual attendance and enthusiasm, which is characteristic of the Group as a whole. After the business had been disposed of attention of the meeting was held by a lecture on Wave Propagation—the lecturer's knowledge of the subject was soon apparent and at a late hour was given a hearty vote of thanks by all present.

6CC appeared with a signal on 2 mx the other day; nice work Frank, that is doing a good job, even though suffering from lack of volts.

DX on 4 Mc. We were pleased to work VK4AB on 2 mx while on a business visit to VKR. How you enjoyed your stay Bob, it was rather a bad start, but a good finish. Stations worked included 6BK, 6ZAL, 6ZAL, 6ZAL, 6ZAT, 6BO, 6AW and 6ZAA. We also worked Bob from the kite on the way back East.

Cold weather has kept activity to a minimum.—6ZAV.

## SPECIAL VKIACA QSL CARD

13th to 16th August, 1956

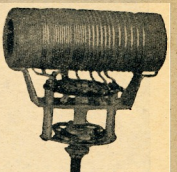
From 13th to 16th August, the Annual Hobbies Exhibition will be held at the Albert Hall, Canberra, Australian Capital Territory, for charitable purposes. As in past years, the Canberra Radio Club will participate by operating an Amateur Radio Station from the Exhibition Hall under the Club's call sign VKIACA.

To mark both the Exhibition and the allocation of the VK1 call sign to Amateur Radio licensees in the Australian Capital Territory as from 1st June, 1956, a Special QSL Card will be issued for contacts with VKIACA during the Hobbies Exhibition.

So keep your ears open for VKIACA on the Amateur bands between 13th and 16th August inclusive.

## "GORLER" COIL TURRETS

AVAILABLE NOW



Will match any impedance from 40 to 1,000 ohms over 80 to 10 Metre Amateur Bands.

29/10 (Postage extra)

## "GELOSO" R.F. CHOKE

TYPE 17572

Six-Pi R.F. Choke for use with Pi-Coupler. Inductance: 3.5 mH, maximum current rating, 160 Ma.

9/9 inc. Tax

## "GELOSO" PI-COUPLER

SPECIFICATIONS:

Dimensions: Length 6 1/2", width 4", height 3 1/2".

Frequency range: 500 Kc. to 30 Mc. (six bands).

All coils complete with trimmers and slugs.

Stages available: R.F., Mixer, Osc. Turret contacts—five per coil—rhodium plated.

Tuning condenser required: 3 gang 200 pF. max. per section.

All circuits are Hi-Q with only best quality ceramic trimmer condensers and polystyrene coil formers.

Any coil bank may be extracted for modification without interruption to operation of other banks.

\$20 (list)

(Discounts to Amateurs)

HOUSE OF QUALITY PRODUCTS

WILLIAM WILLIS & CO. PTY. LTD.

428 BOURKE ST., MELB'NE

Phone: MU 2426





## ***Danger in the Deep . . .***

***"Send SOS; it's the new call and it may be your last chance to send it!"***

The suggestion was made in the wireless room of a ship everyone believed was unsinkable.

A radio officer looked up and laughed.

The time was 12.45 a.m., the date, April 15, 1912, and the sinking "Titanic" sent out the first SOS in history.

Today, a danger as disastrous to shipping as an iceberg is — ***rust***.

Rust is costing Australia more than £3 every second of the day.

Oil coatings\* have now been devised which protect metals from corrosion. Manufactured by SHELL, they vary from thin, oily films suitable for short periods, to thicker, grease-like films for longer protection.

With such coatings Shell is helping Australia to remove the £100 million rust-stain from the balance sheet of the nation.

*\*Shell Ensio Oils.*





# FEDERAL, OSL, and DIVISIONAL NOTES

## FEDERAL PRESIDENTS REPORT 1955-56

It is my privilege to present the annual report of Federal Executive covering the period March 1955 to April 1956. Although members have been dogged with sickness and personal business affairs, I feel there has been steady progress in our year's programme of work. It would be remiss of me if I did not mention that there yet remains a lot of unfinished business on our agenda, but this will be gradually finalised now that a lot of minor matters have been satisfactorily concluded. Turning now to the details of our operations for the period under review:

### REGULATIONS

Our dealings with the Administration have been sustained on a healthy personal basis with several special meetings to discuss additional operational privileges for the Australian Amateur, the very important being the release of Amateur Television facilities and mobile-portable operation for 24 hours without a permit, on which all will have received official notification. The former, although not perhaps affecting a large number in person, nevertheless has realised the culmination of many years endeavour and endeavour to the Department which at long last bore fruit. I am sure the latter privilege will appeal to most Amateurs and I am sure the relaxation of the former restrictions on this aspect of the Regulations.

### POLICY MATTERS

As promised at the commencement of the year, a complete revision of the Federal Policy Book has been issued to all Federal Councillors. This will be kept current from now on by the issuance of amendments as they arise. A matter of some concern was the dropping of the Federal Convention at Easter. It is now three years since a Convention was held and I am certain that the importance of import within each Division which can be aired and discussed around the conference table to the benefit of all. I sincerely trust that the next Convention will be held not later than Easter 1957.

### MEMBERSHIP MATTERS

This year has also seen the advent of a new Division—the Papua and New Guinea Division—which is another historic step in the growth of the Institute. I was privileged to deliver a welcome to the new Division via tape recorder and wish them well. Their station, VK3WJ, is already operating and has become a close bond between outlying members. The membership within Divisions continues to increase and this has been stimulated to some extent by our limited licences and the recently instituted Short Wave Groups in Divisions. It should be the aim of all Divisions to secure membership of ALL full transmitting members so that our Institute encompasses as many as possible of those engaged in Amateur Radio as a hobby.

### NEWSLETTER

During the period our Newsletter was inaugurated and I hope it has filled the gap between official letters and personal correspondence to Divisions as well as providing some matter for Divisional broadcasts of interest to members.

### OVERSEAS SOCIETIES

Our friendly relations with the I.A.R.U., A.R.R.L., R.S.G.B., and the N.Z.A.R.T. have been continued during the period and I look forward to even greater liaison with these Societies on matters of mutual interest in the future.

### VK3WIA

Members of Federal Executive were approached to place the Federal Station, VK3WJ, into operation at the Pan-Pacific Jamboree over the Christmas-New Year period. The decision on this venture was evidenced by the interest displayed by all who saw the station in operation, and these were the first stations to be created "dog-piles" in an endeavour to make contact. In all some 600 contacts were made in 36 different countries during the ten days of almost continuous operation. I wish to record my thanks to all those who assisted with the installation and operation of the station as well as the Services who kindly and generously supplied the bulk of the equipment. It is our present intention to institute a regular news service for disseminating information to all members for which purpose a new transmitter has been put into service. You will hear more of this in the coming year.

## AUSTRALIAN CALL BOOK

The continued success of this publication speaks well for its future and is a tribute to the untiring efforts of the Publications Committee of the Victorian Division, who publish it on behalf of the Federal Council. I think you will agree that our aim to progressively improve the book has been carried out faithfully and I am sure the Olympic Year Edition will prove worthy of its present distinction.

## FEDERAL FINANCES

I am somewhat disturbed by the present state of Federal finances. As can be seen from the Federal Treasurer's Balance Sheet shown here, the balance is very low for an organisation of our size. In addition, account No. 2, which was set aside as a Convention Fund, is almost negligible. Divisions should make an effort to reserve some finance for this account against future Conventions. The last minute inroads into Divisional funds will be obviated if monies are put aside now. A revision of our present financial restrictions is also due, as the costs of operating has progressively increased over the last three years since a Convention.

## CONTEST AND CERTIFICATE MATTERS

The presentation of the W.A.V.K.C.A. award for overseas Amateurs has evinced great interest and is now established as one of the most sought-after DX awards, resulting in very favorable publicity for VK Amateurs. Some work has also been commenced on the Worked All States award for VK Amateurs. Further Membership Certificates have been printed and are now available for issue. The Federal Contest Committee are now operating on a sound footing with properly constituted Rules and Divisions. They have instituted an up-to-date Register of all results of all Contests and Certificates issued since 1945, so that no omission or mistakes should be made in future. Finality has not yet been reached on the Remembrance Day scoring which is very difficult to actually perfect, but every endeavour will be made to complete this as soon as possible. The Ross Hull Contest

was extended to include all v.h.f. bands, per Convention directive, thus enabling I.A.A.C.F.P. operators to participate. The Rules of the VK/ZL DX Contest, in conjunction with the N.Z. A.R.T., have now been stabilised as well as awarded, and this contest promises greater popularity in the future. A willing band of helpers from the VK3 Division have assisted in the conduct of the I.A.D. Contest which continued to attract entrants. A revision of VK3 scoring points have been deferred until after the 1956 Contest. Although the Field Day Contest attracted more entrants this year, the submissions were few, making the Committee's job of checking very difficult. Surely it should not require very much effort to send a log in for checking, even if the chance of winning a certificate is remote. The Federal Contest Committee have had a profitable 12 months of activity under the able guidance of Jim Vivian.

The Federal Awards Manager, Gordon Weynton, has handled 48 applications for the DXCC award, 32 for the new W.A.V.K.C.A. award, 4 for W.A.C. 1 for W.B.R., 4 for D.U.F. and 1 for the W.A.S. 90 award; in all, 93 applications, which represent the lot of work.

The Federal QSL Manager, Ray Jones, and Traffic Manager, Doug Payne, in their respective spheres have unobtrusively carried on their tasks with great efficiency, thus making the tasks of Federal Executive a little easier. To them and all other co-opted officers, not mentioned by name, I extend my sincere thanks for the sterling job they have carried out during the past twelve months. All have given a great deal of time to an honorary office, each being equally important to the smooth functioning and well governing of the Institute. I trust they will all continue in their offices and carry on their respective tasks in the future.

Last, but not least, I wish to thank all members of Federal Council and particularly Federal Executive for the support they have given me during my period of office. I make exception to mention especially, the Federal Secretary without whom the Federal Executive would not function. The personal letters and comments he has made with members from all States

## WIRELESS INSTITUTE OF AUSTRALIA—FEDERAL EXECUTIVE BALANCE SHEET AS AT 29th FEBRUARY, 1956

Current Liabilities, Creditors	£75 19 2	Current Assets—	
Accumulated Fund		Commonwealth Trading	
Balance, 1/3/55	£542 9 1	Bank No. 1 A/c.	£70 8 10
Less Deficiency for the year ended 29/2/56	68 4 10	No. 2 A/c.	1 11 3
		Cash Imprests	0 0 0
		Debtors	240 9 0
		Stock on hand	94 0 0
			£414 9 0
		Fixed Assets (at cost less depreciation)—	
		Eddystone Model "649"	
		Receiver	£18 0 0
		Trophy, R.D.	10 10 0
		Trophy, Ross Hull	
		Memorial	35 4 0
		Filing Cabinet	21 0 0
		Typewriter	51 0 0
			£134 10 0
			£550 3 5

I have examined the books and vouchers of the Wireless Institute of Australia (Federal Executive). In my opinion, the above Balance Sheet is properly drawn up so as to exhibit a true and correct view of the state of the Federal Executive's affairs as at 29th February, 1956, and that the attached Income and Expenditure Account is properly drawn up to exhibit a true and correct view of the results for the year ended 29th February, 1956, according to the best of my knowledge and the explanations given to me, and as shown by the books. Stock on hand at 29th February, has been accepted on the certificate of the Secretary.

1st June, 1956.

REG W. ELLIS, Dip.Com., Chartered Accountant (Aust.)

## INCOME AND EXPENDITURE ACCOUNT FOR YEAR ENDED 29th FEBRUARY, 1956

EXPENDITURE	£	10	s	INCOME	£	10	s
Badges	27	0	0	Per Capita Payments	£172	11	0
Trophy Expenses	14	4	3	Sale of Books and Log Sheets	7	9	1
Printing and Stationery	52	8	11	Loss transferred to Accumulated Funds	68	4	10
Certificates	25	12	2				
Depreciation	22	2	2				
Audit and Accounting	8	8	0				
Postage	14	10	8				
Telephone	6	8	6				
Bank Charges	7	0	0				
Scout Jamboree	40	18	9				
Typing and Duplicating	4	15	0				
Log Sheets	7	0	0				
Repairs Typewriter	7	0	0				
Entertaining	22	11	0				
Sundries	20	14	7				
	£248	4	11		£248	4	11



frequently heard on the lower bands. Jim 2AJ0 not so much heard lately and is probably listening for that rare DX.

#### NORTH WESTERN ZONE

Tom 2AMR has been quite busy on 10 m-x-rports good contacts on the DX bands. Chris, ex-2AJF, has built himself an experimental t.v. camera using a 2 inch iconoscope. Only uses 300 lines of film for experimental purposes. Bill 2ACT, although 300 miles from the ocean, is experimenting with "marine" gear for 7 Mc. using a 400 watt 1000 cycle oscillator. Results are very good and Bill has had contacts as far as the South Coast. Noise from the engine is somewhat troublesome. (How about the 2000 watt 2AJF has been putting "up the boards" on telephone repairs in the flooded areas, whilst Cec 2AKC is on the air every day on 7 Mc. and has regular lunch-time s-s-s with 2AMR/2ACU. Rod 2ACU is operating on 7 Mc. only and is to be heard in the lunch-time gap. The funny background noises are "mumbled sandwiches".

#### CANBERRA RADIO CLUB

On Friday, 30th June, a v.h.f. night was held at the club. About 30 were present. Stan IASB gave a talk on how to convert a SCR522, Ken IAIL (President) talked on how to do a deluxe version of same; John IZBS showed how to do a deluxe mod. osc. using a no. using a no. using a no. which he had fixed up for George 2ZBT. The mod. osc. was tuned in on Ken's 522 rx at the beginning of the talks (the rx being in another room) and the rain was turned down. The mod. osc. was left running into a dummy load during all the discussion and at the end of the rain was turned up. The mod. osc. was still tuned in on the nose. Also at this meeting, it was decided that 7.30 p.m. any night would be the local net time, so you folk on the other side of the world might try turning the beam towards the capital at 1950 hours any night (barring Friday, which is club night), but especially on Saturday.

Another topic, a perennial this, also covered at the meeting was aials. The good results from IZBS' three halos has impressed the boys here. The big advantage is not having to rotate it; elements are still the most fashionable.

A list of those on the air and building 2 m-x gear follows. This does not include a few dark days of silence of kilowatt ambitions! IASB 144.162 Mc. IZBS 144.260, IYF 144.14, IGU 144.1, IUH 146.5, 2ZBT 145.5, IAPV 144.09, IAIL 144.1, on the air at 30/6/56; IUG, 2AQJ, IYV, IAOB, IALS, IZAC, IANR, all building or modifying SCR522s.

#### VICTORIA

There was a very excellent attendance of approximately 100 at the July general meeting. The lecturer was Mr. Jack Vertigan, VK3WR, and his subject, which proved to be a most interesting one, was on "Single Side Band Techniques." Some interesting features of his lecture included the fact that on many occasions he has had 100 per cent. contacts with DX stations when not a solitary a.m. DX signal was audible on his band. Jack gave a short description of the phased type, a most interestingly very detailed description of the lattice filter type. His many block diagrams made his explanation very clear and helped very considerably to allay fears of complications in s.s.b. b.c.s. He dealt very extensively with the ratio of the signal when receiving s.s.b. on the ordinary a.m. rx and proved very conclusively with both description and tape recorded demonstration that too little b.f.o. injection makes impossible on a.m. rx's. B.f.o. injection must be high or, alternatively, the r.f. gain must be turned down for good copy. Members thoroughly enjoyed the lecture, and some mentioned they were eager to read up on the subject as they felt text-books would now be more comprehensible after Jack Vertigan's very enlightening lecture.

Members were very pleased to see George 3AG present at the meeting. George was involved in a bad motor accident a couple of months ago, and although he is still a little bit shaky on it, he assures us he is coming good. Mr. A. Frances-Williams, ex-VS2EU, and who is awaiting a VK call, was welcomed to the meeting and gave a short talk on Malaya. Amateur Radio. The following were welcomed as new members of the Victorian Division: Mr. P. Bennie, 3ZEP, Mr. J. O'Reilly, N. Bloume, and E. R. Price as associate members.

The lecturer at the next general meeting to be held on 1st August will be Mr. Hans J. Albrecht, 3AHH, and his subject will be "Radio

Control of Research Mines." This lecture will be illustrated with slides. As the meeting room will not be available on the first Wednesday in September, there will be no general meeting that month. The next general meeting will be held on Wednesday, 29th August, when Mr. Alan Foxcroft, 3AE, will give a lecture entitled "Sunspots and DX". This lecture will be illustrated with slides.

A 3 x 5 block and tackle, giving a 1-ton lift for a distance of 36 feet, together with a carrying case, has been donated to the Institute. This new addition to the lending section of the Institute Library may be borrowed when Mr. Alan Foxcroft, the Administrative Secretary at the Institute rooms, 191 Queen Street, Melbourne. Well, that goes to show that there just is no reason why you can't get that antenna up now!

Hans 3AAH has received a letter from the President of VK2, Jim 2VC, asking Hans to convey thanks to all in VK3 who co-operated in keeping the emergency frequency 7050 Kc. clear during the recent floods.

Hey, didn't anybody read my notes last month. Surely you're not just one who clutters up the slow more practice transmission frequency 3550 Kc. in the 80 m-x band on Sunday evenings between 8.30 and 9 p.m. If you are, you are likely to have the 80 m-x tx hunters tracking you down and personally requesting your consent to keep the frequency clear. It's just for such a very short period and only once a week, you know. A new operator has been added to the roster for these transmissions, Jim 2Vern 3VJ and he will give his first transmission during the month of August, and being new at the job he will be particularly anxious to receive reports on his transmissions, either by letter or call on 80 m-x. These transmissions are also relayed on the 2 m-x band on 146 Mc.

There have been several requests that the names of the Victorian Division Councilors be again published in the magazine. They are as follows: President, G. Dennis, 3TF; Secretary, F. Hall, 3VS; Treasurer, M. Hodge, 3VH; 3AHJ; J. Marsland, 3NY; K. Pincott, 3APJ; H. Charles, 3AHC; L. Robinson, 3ALD; D. Wardlaw, 3ADG; C. Johningham, 3QU.

Have you purchased a copy of the latest "Call Book", the Olympic Edition? It's a book! Let well worth having. Copies are available at the Victorian Division Office where the Administrative Secretary, Mr. Alan Foxcroft, attendances on Tuesdays, Thursdays and Fridays between 9 a.m. and 4.30 p.m. Are you ready for the 80 m-x All-Band Scramble to be held on Monday, 6th August, between 8 and 9 p.m. For rules, see copy of "A.R." for Sept., 1955, p.12. The Remembrance Day Contest is scheduled for 11th and 12th August. See rules and details see "A.R." for July, 1956, p.5.

#### 80 METRE TRANSMITTER HUNT

Despite a rather cold and windy day, we had a very good turn-out to the last 80 m-x hunt. The crowd numbered 46 with Amateurs, their XYLs and families. We were very pleased to see several new starters come along, they included Tom 3AOG, George 3XJ, Bill 3AQB and Noel 3ANS. The tx was hidden by Ed, 2EM and was located at Altona. Ed had a hole in the sand and used a long wire for the aerial, which was attached to a box kite and being a very windy day, Ed had no difficulty in keeping the kite sailing away from the high up in the air. The first to arrive in the vicinity of the hidden tx was Noel 3ANS, but unfortunately for Noel, he didn't snoot around quite enough and he drove off without detecting the tx. Eric 3ADU was the next one to come along and he found the tx and became the winner. He was followed by 3OJ second, and 3ZAD third.

The next hunt will be held on 5th August, when the winner, 3ADU, will be hiding the tx. How about coming along, we'd enjoy your company? Bring the family and friends and some afternoon tea and make a picnic of it. We are sure you'd enjoy the game, too, as they are a very friendly lot. These hunts will start at 2.30 p.m. from the plantation in College Crescent at the rear of the University. Remember, Sunday, 5th August. We'll hope to see you.

#### VK3 QSL BUREAU

Would members please note that all QSL cards for VK3 (both inwards and outwards) are now handled at the Victorian Division's rooms. The correct address is Wireless Institute of Australia, Victorian Division, 191 Queen Street, Melbourne, Vic.

#### SOUTH WESTERN ZONE

The zone is still very active on most bands, no matter what time you turn the rx on you will always hear one of our chaps on one of the bands, particularly Jack 3JA, who seems to be the king of the 14 Mc. band, also Harry 3XJ, who has now worked 105 countries, which is a very good figure. John 3ARJ is still getting his share of QSOs on the old ATS, Bill Wines and XYL spent a few days in Geelong on holidays and met 3IC, also went to the club meeting. Bill 3AWZ has had a little QSB in the old carcase which I hope has cleared up. Norm 3E2 is still getting steamed up ready to remote control all the gear from the lounge, 3JA and XYL recently spent a couple of weeks in VK3. John 3AGD has been busy lately, having been visited by Kevin 3AKR and others. Leigh 3I had rather a good time in Central Australia with 3ANA.

The minutes of the last meeting should be in the hands of all concerned very soon, also the date for the usual Zone Convention has not been set yet, but will be either in October or the first week in November, the latter would be better. The Kinnear Trophy should be in the zone shortly as it has been engraved and 3XJ will collect same.



## GLO-RAD KITS

The list of Kits is growing fast.

### RACKS AND CABINETS

specially designed to house units constructed from "Gloradkits" are now available.

Judging by the demand for "Gloradkit" Bulletins the interest is very keen.

BE IN IT—SEND FOR YOUR COPY NOW.

**GLO-RAD**  
ENGINEERING SERVICES

291a TOORONGA RD., S.E.6  
MALVERN, VICTORIA

Phone: BY 3774



**NEW BOOK!**

# "HIGH FIDELITY"

## THE HOW AND WHY FOR AMATEURS

by **G. A. BRIGGS**, assisted by **R. E. COOKE, B.Sc. (Eng.)**, as Technical Editor



As the title implies, this non-technical book is intended for amateurs, but it should also interest those who have not yet joined the ranks of amateurs and are merely contemplating a step in the direction of better sound reproduction in the home.



190 PAGES, 65 ILLUSTRATIONS  
BOUND FULL REXINE  
FINE ART PAPER

**PRICE: 20/-** Postage 1/-

DE LUXE EDITION  
BOUND IN RED LEATHER

**PRICE: 27/6** Postage 1/3

MAIL ORDERS BY RETURN

## McGILL'S AUTHORISED NEWSAGENCY

Est. 1860

183-185 ELIZABETH STREET, MELBOURNE, C.1, VICTORIA

"The Post Office is opposite"

Phones: MY 1475-6-7

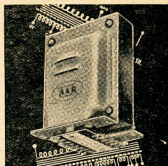
## NEW! Top Quality A. & R. Power Transformers

**DEPENDABILITY**  
**PERFORMANCE**  
**QUALITY**  
**APPEARANCE**

The latest in its field! Built to a high standard, yet reasonably priced, this NEW range of Power Transformers has been carefully designed to conform with the existing high quality of other A. & R. Products.

Designed for use in amplifier and similar power supply equipment, these transformers are produced on the latest coil winding machines, in conjunction with new manufacturing techniques, and only tested and approved raw materials are used in their construction. As illustrated, all types are mounted in attractive vertical pressed steel covers, finished in A. & R.'s standard silver grey. Leads are terminated on clearly designated terminal boards.

Obtainable NOW from all A. & R. Distributors! Our Distributors will be pleased to supply data sheets detailing the A. & R. standard range.



Type	Ma. D.C.	Sec. Volts:	Type	Ma. D.C.	Sec. Volts:
1763	100	300-C.T.-300	1776	175	285-C.T.-285
1764	"	325-C.T.-325	1777	"	325-C.T.-325
1765	"	385-C.T.-385	1778	"	350-C.T.-350
1766	125	285-C.T.-285	1779	"	385-C.T.-385
1767	"	300-C.T.-300	1780	200	350-C.T.-350
1768	"	325-C.T.-325	1781	"	400-C.T.-400
1769	"	350-C.T.-350	1782	"	450-C.T.-450
1770	"	385-C.T.-385			
1771	150	285-C.T.-285	Type 1400	250 Ma. D.C.	Sec. Volts: 565, 500, 425 each side C.T.
1772	"	325-C.T.-325			
1773	"	350-C.T.-350	Type 1371	300 Ma. D.C.	Sec. Volts: 1000, 850, 750 600, 500 each side C.T.
1774*	"	350-C.T.-350		400 Ma. Inter- mittent Rating)	
1775	"	385-C.T.-385			

\* Includes 2.5 Volt Filament W.D.G.

Types 1763 to 1782 Vertical Mountings with Terminal Boards. Type 1400 Horizontal; Type 1371 Vertical with Top Term. Board.

## A. & R. ELECTRONIC EQUIPMENT CO. PTY. LTD.

378 ST. KILDA ROAD, MELBOURNE, VICTORIA

Victoria: Homecrafts P/L, J. H. McGrath & Co. P/L, Radio Parts P/L, Warburton Franki, Motor Spares Ltd. 8th. Aust.: Gerard & Goodman Ltd., 195 Rundle St. Adelaide. Qld.: A. E. Harrold, 123 Charlotte St. Brisbane. W. Aust.: A. J. Wyle P/L, 1064 Hay St., Perth. Tas.: Homecrafts P/L, 220 Elizabeth St., Hobart. N.S.W.: United Radio Distributors P/L, 175 Phillip St., Sydney; Homecrafts P/L, 100 Clarence St., Sydney.





August from their Hobbies Exhibition. Answer their calls chaps, it's a great help to such fellows as I and I'd like to see you put on an exhibit like that if the contacts pile up. So do your share to help spread publicity of our hobby.

Bob SRI busy re-building converters (better be careful here, this is v.h.f. stuff), all the same his other gear all working well, and getting cleaned up ready for R.D. Contest. Bob always a good contact. Lance 5XL has an atom-bomb-proof shack, dug into a hillside; complete with these days. Can't hear him all the ways Lance, we are all a bit gossamerly these days. Anyway, nice to hear you on, keep it up. No need to get a Sunday morning setting rather scientific and quote thermometer and barometer readings these days. Whg. some will be quoting input power to fans! When you're up regularly, let me know. Will be the first to start that one?

The Woomera boys at 5WC—now there is a real one—your-bug-up regularly come with rhombics, vee beams and verticals, with a 5 by 9 signal. But Ron and company, why always choose that time to apply a half round to the mike base? If you want to file off the DD from the name-plate, do so when listening. George 5EC has had his XYL down for a while, but he's back and luck that, hope all will soon be well George.

News has been received that BTG is the first in this State to gain a T.V. license, congrats OM. Be sure to look in the new spheres, we may be looking for you. By the way, he had an interview with a local publication who wrote him up well and he got front page publicity, pitched in with all the other really upset men that in the background of the block there was a W card displayed. Alas it's the only way I ever see such things.

Understand Joe 5JO has received confirmation of his W.A.C. Congrats Joe, D.X.C.C. coming up. Sorry to hear of this month, but we hope to be better organised next time and will make up the lee-way then. Your new scribe will appreciate a line or two from the outer land, and a circle regarding your activities for compiling these notes. We want to keep them of general interest and representative of the whole country. I assure you that they will be read for news but that won't cover the whole field due to variable skip from this QTH.

Gordon 5KU and formally Warwick 5PS (that was his name and address) are making a job. They were amongst most of you. I'm further away and a great number of you don't know me yet, but you will—SEF.

— — — — —

## WESTERN AUSTRALIA

The June meeting of the Division, which was well attended, took the form of a visit to the Dept. of Civil Aviation at South Guildford. Most of the members were welcomed by Mr. J. Bush, of D.C.A., and spent a very enjoyable and instructive evening.

Country members, particularly, appreciate the good job Wally GAG is doing as broadcast officer at 6W1 on Sunday mornings. Transmitting simultaneously on 80, and 40 mx, he presents the news in such a way that all the members are kept well in touch with Divisional affairs and activities. Keep up the good work, Wally.

6MK is making a flying (air) visit to England this month. 6LG has set himself up with gear to listen on 144 Mc. and has been working some of the best 20 m. band work in the country on about 80 mx now? 6UG was heard recently using a temporary aerial, having once more been taken down by a high wind. 6JG is re-building it really strong this time! Others who suffered some aerial damage were 6FD and 6TH. The latter has a nice new 7x and is now interested in cubical quads. 6TR is building a portable rig for 40 mx, also modifying a new converter.

6BE now firmly settled in his new QTH in the hills and is putting out f.b. 59 phone with a new EL34 (AB1) modulator. 6KO has just completed a 20 m. shortened beam. 6JH has been heard on 40 mx phone and c.w. 6AG was recently heard calling CQ and testing at 800 hours on 40 mx. 6BS still has a 15 m. DX, but also works 80 mx. 6LH just getting settled in new QTH, quite close to but 100 ft. above the previous one. 6DX was recently heard on 80 mx. 6GJ now settled in Albany on the air again. 6TK is back from a visit East. Hope you had a good time, Terry. 6KJ is regularly heard on Sunday mornings and pops up occasionally on 80 and 40 mx. 6CN expects to be active soon, now a.c. mains have been put in. 6GU has been heard from his new QTH at Inglewood.

Local activity seems to be improving, your scribe having worked 53 VKOs on the 1.7 bands

over the past 12 months, and many more are keen to get active.

R.D. Contest, 11-15th August. Preparations are already under way in many shacks, and stations seldom heard on the 1.7 bands, at other times, it appears. Remember that you must have the gear ready. It looks as if this year's Contest will be a good one. I would not like to predict the points, but I suspect that the boys over East. Anyway, may the best Division win!

The 40 Metre Scramble has been fixed for 23rd September. This local contest was much enjoyed by all participants last year and is good fun. Don't miss out on it, VKOs.

A suggestion has been made that a monitoring group be formed to log commercial QRM on the Amateur bands and volunteers are asked for. Short wave listeners with suitable monitoring equipment can be in a good position. Finally, don't forget to complete and post the Questionnaire and let your scribe have "copy" in good time to mail so it reaches H/Q by the eighth of the month.—GEJ.

— — — — —

## PAPUA—NEW GUINEA

Air 9AB has now left the Territory for ZL and is now looking for a place to leave his old stamping ground. Another to leave is Edwin 9VP who will be located in Canberra. The only gain that I know of is a new country added to VKG on New Guinea. The information comes from KV4AA, who is QSL manager for Danny on a cruise and at present at VR11. He is heading for the Pacific and wants a prompt QSL for one of his choice pounds, that will set you back one dollar which goes towards the financing of the DXpedition. Whether you, the J.C.A. Manager, the Bureau and Dick says may take up to two years before he gets them all away.

Harry 9HC is now returning from leave and at present located at L.C. He is re-building a nice outfit and should make his presence felt just as soon as he knows where his permanent home will be. He found time to write for the shack of 9RM recently, along with his XYL and harmonics, and all the usual interesting ground was duly covered. Les 9HJ has now shifted QTH to a more suitable location for an antenna farm and intends putting up some fancy gear. GUT rig is progressing well and we now need a modulation transformer to put out 230 volts of audio, if anyone can assist with a contribution. I have been informed that the Rabaul Radio Club is now in full swing with Bill 9BW in the chair and 9BS the first Secretary. We look forward to then joining the same. The gang-ups with the rest of the gang, W.A.S. has now been earned by 9DB and 9RM and finished the race with a draw. Both sides are now looking for a clinch the deal, so it will be interesting to see who collects the first post-war W.A.S. award for VKG. While on the matter of awards, JAL's, the J.C.A. Manager, informs me that the A.J.D. Award can now be obtained from W.I.A. with the necessary verifications instead of sending direct. Incidentally, I received one recently and they are quite an attractive piece of decoration, if anyone is thinking of chasing it.

By the time these notes go to press, will see your notice about the new 7x and 6LH in the south, complete with rig to be set up in VKG, so this is going to be my own song. I have enjoyed very much my association with all the Aussies in the Territory over the past 20 years, and it is with regret that I have to relinquish the close contact with you all, but I look forward to the time when I shall be at some later date. I can note a big increase of Amateurs over the years from the days of only a few, a few years ago. I hope that where I am and QSL Bureau, with every man for himself, so you will see things are really progressing in the fraternity.

It is this opportunity of wishing you all au revoir and a continued rate of progress within the Amateur ranks in the years to follow, and I am sure all have had the pleasure to further our aims has always been a pleasure—9RM.

— — — — —

## CORRESPONDENCE

The opinions expressed in these letters are the individual opinions of the writers and do not necessarily coincide with those of the publishers.

### THE R.D. CONTEST

Editor "A.R." Dear Sir,  
I am again reducing operation time in this contest. The name would be required. Would it be, say, "R.D. Contest"? To combat the operating dissatisfaction expressed, may I suggest (1) Operation on 80, 40 and 20 mx bands

only; (2) Contacts to be either 100% c.w. or phone; (3) In the quiet early hours allow interstate contacts on all bands—1 point per contact; hours to be fixed for each State, but Interstate contacts also permitted during the period; (4) Raise the points permissible for QSL eligibility.

Having spent 13 years (out of 36 years since first licensed) in the country with no a.c. or i.c. power available, my suggested changes bring more country Amateurs into the Contest.

—ARCH J. HEWITT, VK5XK.

### JOHN FLYNN MEMORIAL CHURCH

Editor "A.R." Dear Sir,  
Further to the references to the John Flynn Memorial Church contained in the June issue, I thought it might be of interest to bring to notice that in the "Memorial Wall" is a tablet mentioning the following names in addition to those referred to in the article:—

D. G. Wyles, G. Towns, E. N. Gollan, H. Kinnbrunner, M. E. Anderson, and V. L. Kerr (the three last named are VK4HJ, VK3AMA and VK4LK, respectively), "whose counsel and technical skill enabled Flynn to realise his dream of effective communication in the outback."

It is established beyond doubt that the Traeger transceiver, as used extensively in "The Centre" has been a great help in the development of the more isolated parts of the country by making it possible for women and children to live on pastoral properties and still feel that they are not beyond aid should such ever become necessary.

—T. LAIDLER, VK5TL.

[Further information on this subject has come to hand and we hope to publish an article covering the early days of the Flying Doctor Service in a later issue. If you can supply any information on this subject please forward same to this Journal.—Editor.]

## HAMADS

1/- per line, minimum 3/-.

Advertisements under this heading will only be accepted from Institute Members who desire to disseminate information which is of a personal property. Copy must be received by 8th of the month, and remittance must accompany advertisement. Calculation of cost is based on the rate of 1/- per line. Despatch of advertisements not accepted in this column.

**FOR SALE:** Transmitter c.c. 5 band, 60w, p.p. 807s, 5 ft. R & P mounting. Mod. AB2 KT68, c/w pwr. supplies, relay controlled, 18 tubes, reliable, £35. V.F.O., shielded, Clapp osc., temp. comp. 6N6-807 3w. output 3.5 Mc., calibrated 5 bands, bandsread, n.b.f.m. 6L7 Mod., 2 S/amps. reg. power supply, £10. ASB 575 Mc. Receiver unmodified c/w GL446 lighthouse and other tubes (9), £6. 3 watt p.a. w/speaker and 78 r.p.m. t.t. and p.u., Garrard. £5. 10 watt p.a. vel. mtc. 2 ext. speakers in carrying case, £15. 1243 v.h.f. Tx-Rx, Rx mod. for 50 Mc. Test Set 5A, mod. and cal. 100-150 Mc. c/w v.t.v.meter, leads, and a.c. power supply, for alignment of 522 and 1143 v.h.f. sets. Inspection, reasonable offers considered, night or weekends. E. Manifold, 267 Jasper Road, McKinnon, Vic.

**FOR SALE:** V.h.f. Field Strength Meter, calibrated range 100-160 Mc., fitted with 100 Ma. meter, telescopic antenna, c/w tube and batteries in a steel case, price £8. L. A. Paul, 340 Rathmines St., Fairfield, Vic. JY 1823.

**FOR SALE:** Xtals, many freqs., mostly FT243 holders. All £1 ea. Write for list. T. R. Naughton, Box 80, Birchip, Vic.

**WANTED:** Bendix BC221 Freq. Meter, ABW1 Wavemeter, D. MacMillan, 28 Vernon St., Cessnock, N.S.W.

**WANTED Urgently:** "QST," April, '49. Good Price. R. Neal, 11 Xavier Street, North Essendon, Vic. FY 9380.



# Homecrafts

77% LTA

AMATEURS'  
BARGAIN  
CENTRE ★

## Buy Your Test Equipment on Homecrafts' Easy Terms

### HEAVY DUTY RHEOSTATS

200 ohms  
9/11 each

### 15-CORE CABLE

suitable for  
Talk-Back Systems, etc.  
3/6 yard

### Q PLUS COIL FORMERS

5/16 or 9/16 inch dia. iron cored.  
3/4 each plus tax.

### TWIN FEEDER CABLE

300 ohm type  
10d. yard plus tax

### CO-AXIAL CABLE

72 ohm, 1/048 semi-air spaced  
2/2 yard plus tax

### SPECIAL!

#### PEERLESS SPEAKERS

10 inch Twin Cone  
6 watts, 50-15000 cycles per sec.  
95/- each plus tax

### CABINETS OF DRAWERS

12 large type Drawers, 9 x 4 x 3  
inch ..... 79/6 plus tax  
12 Medium type Drawers, 7½ x 3  
x 1½ inch ..... 52/8 plus tax  
16 Small type Drawers, 5½ x 2½  
x 1½ inch ..... 36/8 plus tax

### POCKET SIZE MULTIMETERS

English make, 1800 ohms per volt  
£9/19/6 each

### 0-20 VOLT D.C. METERS

2 inch square, 5 Ma. movement  
10/- each plus tax

### Rack Mounting Type AMPLIFIER CHASSIS

Overall size: 19 x 10 x 7½ inch  
10/- each

### TRANSMITTING TUBES

327 ..... 15/- each  
RX21 Mercury Vapour Rec-  
tifiers ..... 15/- each

### Full Track TAPE ERASE HEADS

Brand new in boxes  
39/6 each

### RESISTOR OR CONDENSER SUBSTITUTION BOXES

Metal box complete with en-  
graved panel, ready for building  
up into useful instrument.  
Requires the addition only of  
switches and condensers or  
resistors.  
10/- each

### Brand New 7 INCH PER. MAG. SPEAKERS

Well known make, boxed.  
27/6 each plus tax

### WIRE WOUND RESISTORS

Good assortment.  
Approx. 24 in bag.  
10/- bag

### ELECTROFLASH CAPACITORS

650 uF. 250v.  
42/9 each

### BARGAINS! BARGAINS!

#### GANG CONDENSERS

Large variety, 2 or 3 gang.  
8/11 each

#### POWER TRANSFORMERS

various types  
10/- each

#### WIRE WOUND POTENTIOMETERS

1000, 2500 and 10,000 ohms  
3/11 each

#### SWITCH POTENTIOMETERS

one megohm  
4/11 each

#### PUSH BACK HOOK-UP WIRE

10 yards for 2/-

#### ENAMEL WIRE

27 s.w.g., 2 oz. coil, 2/- plus tax  
22 s.w.g., 4 oz. coil, 3/9 plus tax  
20 s.w.g., 4 oz. coil, 3/9 plus tax

NO MAIL ORDERS. PERSONAL SHOPPERS ONLY.

290 LONSDALE STREET, MELBOURNE

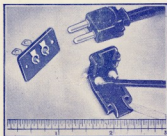
FB 3711

# TV for the Amateur

## Plugs & Sockets for TV Aerial Terminations by BELLING AND LEE

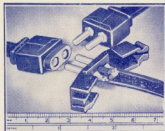
A complete range of twin feeder and co-axial transmission line plugs and sockets is provided for Amateur and TV services by Belling and Lee Ltd., as under:

### Plugs and Sockets for Twin Feeder



L733/P—Free plug for twin feeder.  
L733/S—Fixed socket.

These inexpensive plugs and sockets were designed for use with unscreened balanced twin feeder as employed in television and short wave installations. Accepts 80 or 150 ohm feeders. L733/J—Free socket. This is similar to L733/P, but is fitted with socket inserts as in L677/J.

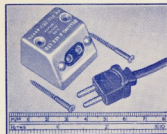


L733/J—Free socket.  
L677/P—Free plug for twin ribbon feeder.  
L677/J—Free socket.

Designed for use with 300 ohm unscreened twin ribbon feeder as used for short wave work and television. Conductors are pinched in the spills on the solid pins and the "butterfly" type moulding folds over the feeder.

Special slots grip the cover over the cable conductors.

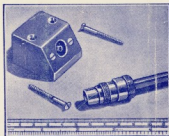
Interchangeable with L733/P and /S, and L739.



L739—Outlet socket box for 80 or 150 ohm feeder.  
L791—For 300 ohm feeder.

A skirting board termination for unscreened balanced twin aerial feeder. L733/S forms the outlet socket which will take L733/P or L677/P.

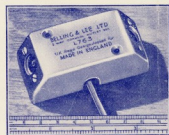
### Co-axial Outlet Sockets



L735—Outlet socket box.

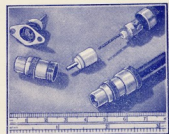
An improved surface mounting outlet box designed primarily for neat termination at the skirting board of television aerial installations. Will accommodate feeders up to 5/16 in. diam. The appropriate range of plugs is listed under L1329, L734/P and L781.

This box is also suitable for certain laboratory and test bench installations.



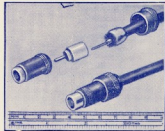
L763—Double outlet box.

This box has two standard outlet sockets and is complete with a "star" matching network which provides the coupling between the incoming cable and the outlets. When two receivers are connected, the input to each is 6 db. down on the input to the box. Designed for use in demonstration rooms, workshops and laboratories, etc., or where neighbours in semi-detached or terraced houses wish to share a television aerial installation. The appropriate range of plugs is listed under L1329, L734/P and L781.

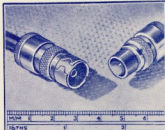


L734/P and L1329—Standard free plugs.  
L734/S—Fixed socket.

### Co-axial Outlet Sockets



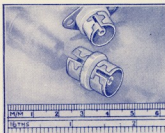
L781/P—Free plug, insulated.



L734/J—Al—Free socket.

Belling and Lee range of plugs L734/P, L781/P and L1329 conform to the draft R.E.C.M.F. Specification for television inlets. In addition to these requirements they are also designed to meet the various recommended methods of correct loading. In L734/P and L781/P the pin is retained in the insulator. L1329 has a hinged moulding to enable the pin to be withdrawn for soldering and/or crimping.

Complementary sockets for above range of plugs are L734/S, L694/S (fixed) and L734/J (free).



L616—Adapter.  
L694/S—Fixed socket.

A particularly useful application is for the aerial input circuit to car radio installations. The co-axial cable designed expressly for this purpose loads perfectly into this lug. The sockets are suitably designed to hold the plug against vibration and are cadmium plated.

The fixed socket L694/S is the complementary mating member to our co-axial plugs. A flush mounting type, L734/S, is also available.

Australian Factory Representatives:

R. H. CUNNINGHAM PTY. LTD., 118 Wattletree Road, Armadale, Vic.